

BACKGROUND AND PRELIMINARY FINDINGS REPORT

Mission Bay
San Francisco

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BACKGROUND AND PRELIMINARY FINDINGS REPORT

Mission Bay San Francisco

City and County of
San Francisco Planning Department

KwanHenmi Architects
Carl Anthony & Associates
Robert L. Harrison
Philip Williams & Associates
McGuire & Company

November 8, 1985

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Background and
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Introduction

INTRODUCTION

This report contains in abbreviated form the three elements that together provide the basis for planning for Mission Bay: (1.0) existing conditions, (2.0) prevailing principles and objectives and (3.0) current opportunities and constraints affecting development and/or conservation of site resources.

It is a draft working paper which will expand and undergo amendment as the planning process continues. Ultimately, it will be included as part of the Mission Bay Draft Plan document.

The Existing Conditions Chapter defines the extent of the Mission Bay site and highlights the salient natural and built features characteristic of the site and its surroundings using current (1985) information. Wherever noted, information from an analysis¹ prepared by Jefferson Associates Inc., in 1982 has been used to describe existing conditions. This older data will be updated as soon as current data becomes available. Also, extensive background material will be provided through the Mission Bay Study Environmental Impact Report (EIR). Thus this document is not meant to duplicate other work but only extract the most important considerations for current planning purposes.

¹ This document is titled "Mission Bay Project EIR, although it was never published as an environmental impact report. For purposes of this report it will be referred to as the Jefferson environmental analysis.

Chapter 2.0 provides the framework of adopted principles, objectives and policies that currently address development and/or conservation on this site. These principles, objectives and policies are from all pertinent city documents and State and regional documents and represent current agency positions. In addition, several community plans for use of the site have been prepared. Each includes principles and objectives for site planning which are also incorporated in this chapter.

In Chapter 3.0 opportunities and constraints for site planning are identified. Graphics and associated text in several topical areas address the way that the features of the site and its setting suggest either the potential for site utilization or constraints that limit its use.

Existing Conditions

I.0 EXISTING CONDITIONS

I.1 Introduction

This section highlights existing conditions on or near the Mission Bay site that may affect the plan development process. It is based largely on existing data drawn from the Jefferson environmental analysis (1982) which has been updated or verified wherever possible. Other information has been collected by the Mission Bay Planning Team and/or through the efforts of the environmental consultants who are currently preparing the Mission Bay Study EIR. This section is not intended to be an exhaustive description of the environmental setting as that will be provided in the Mission Bay Study EIR. Instead, it is focused on those factors anticipated to assert the most influence on any plans developed for the Mission Bay site.

A. The Site

The Mission Bay site is located near the eastern edge of the City of San Francisco, in an area historically and presently used for industrial activities. Its boundaries, shown on Figure I, can generally be described as Townsend Street, China Basin Street, Mariposa Street and Seventh Street. It is a flat, approximately 294-acre site. There are parcels that are not included in that acreage, along the eastern and southern edges of the site, that are not part of the area for which plans are going to be prepared.

THE HISTORY OF THE UNITED STATES OF AMERICA

1. The first part of the history of the United States is the period from the discovery of the continent by Christopher Columbus in 1492 to the establishment of the first permanent settlements. This period is characterized by the exploration of the continent by Spanish, French, and English explorers, and the establishment of the first permanent settlements by the English in 1607.

2. The second part of the history of the United States is the period from the establishment of the first permanent settlements to the American Revolution in 1776. This period is characterized by the growth of the colonies, the struggle for independence from Britain, and the establishment of the United States as a new nation.

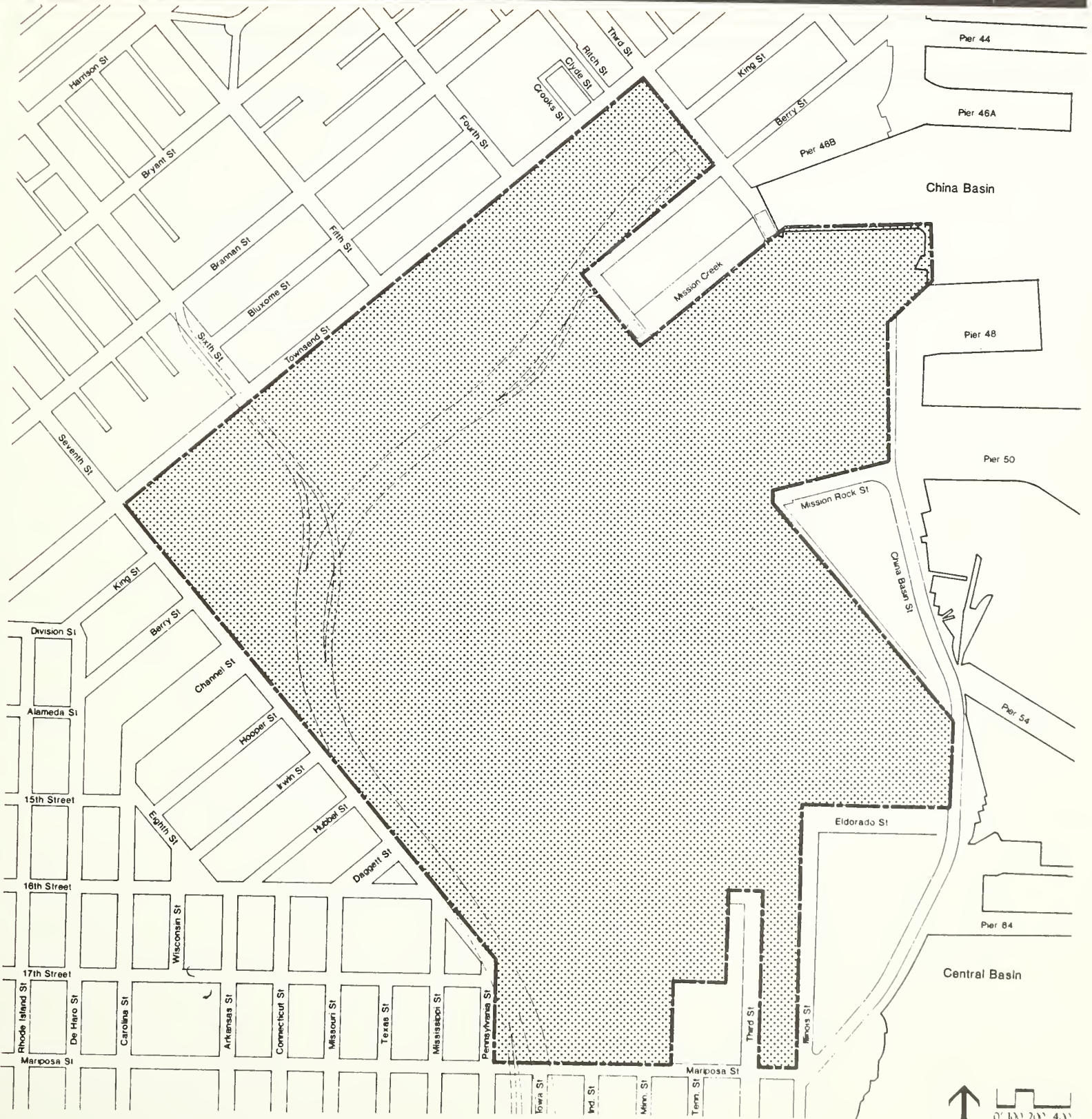
MISSION BAY SITE

Figure 1

Mission Bay San Francisco for the City and County of San Francisco Planning Department

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1.0 EXISTING CONDITIONS

1.2 Physical

1.2.1 Geology and Soils

The following analysis and description was prepared in April 1982 by Dames and Moore, as part of the geotechnical consultation prepared in 1982. In the project area the soil and geology may generally be described as heterogeneous fill soils at the surface, underlain by fairly thick Bay Mud deposits, underlain in turn by stiffer sedimentary deposits, with bedrock consisting of shale, sandstone and serpentine of the Franciscan assemblage. The exceptions are those areas where the project is beyond the former shoreline of Mission Bay (see Figure 2), such as at Mariposa Street on the south end of the project and on the north along part of Townsend Street at Seventh Street and on the north along part of Townsend Street at 3rd Street. Borings drilled in the site and nearby vicinity indicate thickness of the Bay Mud, depth to bedrock and profile cross-sections. (See Dames & Moore, 1982.) The geologic stratigraphy can be generalized as follows:

Fill: Artificial fill was used to reclaim the property in the late 1800's and early 1900's. The fill consists of heterogeneous mixtures of sand with some silts and clays, brick, cinders, concrete rubble and trash. The thickness varies across the site from about 3 to 27 feet.

Recent Bay Mud: Bay Mud is a marine deposit of soft compressible organic clay and silty clay which overlies sand and older bay mud deposits in the project area. Plate 2 presents the Isopachous Map of equal thickness of Bay Mud throughout the project area. The Bay Mud is probably as thick as 100 feet in the central portion of the site.

HISTORIC SITE AREA

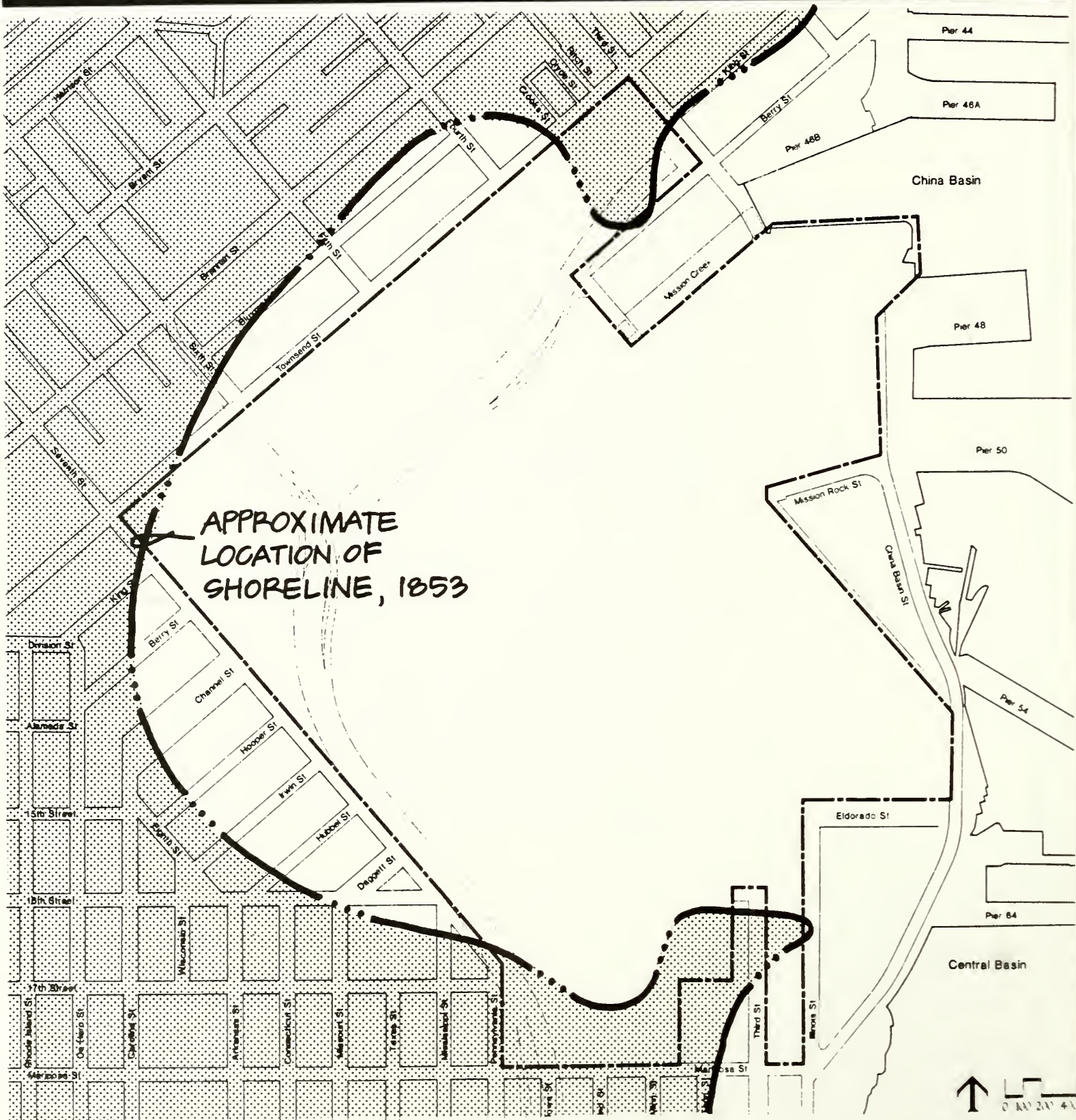
figure 2

Mission Bay San Francisco

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1.0 EXISTING CONDITIONS

Old Bay Clay: Old Bay Clay is a stiff overconsolidated marine deposit consisting of silty clay with occasional interbedded sand layers. This deposit varies in thickness across the site with an estimated maximum thickness of about 110 feet.

Clayey Sands: Dense clayey sands have been identified beneath the old bay clays and extend to bedrock.

Bedrock: Bedrock of the Franciscan assemblage consists of highly weathered and fractured sandstone, shale and serpentine. Bedrock is present at or near the surface in the southeast portion of the site along Mariposa Street and is as deep as about 220 feet in the central and eastern portions of the site. The depths to bedrock have been developed from the borings previously drilled in the project area.

Groundwater: Groundwater conditions at the site have been evaluated using information from existing boring logs. In general, the groundwater table elevation is equivalent to the mean water level in adjacent San Francisco Bay, which is about mean sea level. The groundwater may be expected to occur between depths of 2-7 feet below the ground surface, depending on site topography.

Groundwater quality information at the site is not available, but experience at nearby projects indicates that it is probably brackish due to the proximity of San Francisco Bay.

Flooding

The potential for inundation at the site due to exceptionally high tides or tsunami runup was investigated. A review of available flood data indicates that the 100-year high tide (the height which is equalled or exceeded with an average frequency of once every 100 years) would reach an elevation of about -2 to -3 feet (SF datum).

I.0 EXISTING CONDITIONS

A tsunami is a long period ocean wave which can be generated by earthquakes, submarine landslides, or volcanoes. Upon reaching shallow coastal waters, these waves may increase in height to tens of feet, causing coastal flooding and associated damage. The anticipated tsunami runup along the San Francisco Bay shoreline in the vicinity of the site is -3.6 feet (SF datum) for a 100-year recurrence interval and -1 foot (SF datum) for a 500-year recurrence interval. (Garcia and Houston¹)

Inundation of the project by either flood tide or tsunami is considered rare. The China Basin Channel would of course be subject to the flood tide and tsunami effects, within the range of elevations mentioned previously.

Seismicity

San Francisco lies in a tectonically active region, where the North American and Pacific Plates come in contact. This contact region is characterized by northwest trending faults exhibiting mainly right lateral strikeslip movement; that is, the movement is predominantly horizontal with the western side of the fault moving northward with respect to the eastern side of the fault.

¹ Reference: Garcia, A.W. and Houston, J.R. Type 16 Flood Insurance Study: Tsunami Predictions for Monterey and San Francisco Bays and Puget Sound; U.S. Army Engineer Waterways Experiment Station, Technical Report H-75-17, 1975.

1.0 EXISTING CONDITIONS

The major faults in the region include the San Andreas Fault and the Hayward Fault. The San Andreas lies approximately 9 miles southwest of the project site and the Hayward lies approximately 10 miles northeast. Large magnitude earthquakes have occurred in the past on each. Several other faults occur in the vicinity of the site including the Calaveras Fault and the Seal Cove-San Gregorio Fault. Activity on either the San Andreas or Hayward Faults would probably cause the largest accelerations expected, due to their close proximity to the site. Since 1850, over 400 earthquakes with Richter magnitudes of 4.0 or greater have been reported within the zone of seismic influence around the site.

Some hazard may exist in the area proposed for development due to seismically induced ground failures such as liquefaction and associated lurching and lateral spreading. The project area lies within a region designated as being susceptible to liquefaction (Blume¹). However, more recent studies (Hovland and Darragh²) indicate the potential is probably less over most of the project area. Their studies of damage reports from the 1906 earthquake indicated that liquefaction was most prevalent in fill soils placed over marsh deposits near the shoreline of Mission Bay. Liquefaction was not reported in fill soils placed over Mission Bay itself. Liquefaction in 1906 which occurred within the bounds of the planned project area was restricted to the vicinity of Townsend Street, over the old

1 Reference: Blume and Associates, Engineers. San Francisco Seismic Safety Investigation. 1974. Published by John Blume & Associates.

2 Reference: Hovland & Darragh. Earthquake-induced Ground Movements in the Mission Bay Area of San Francisco in 1906, ASCE Conference, Oakland, California, August 1981.

I.0 EXISTING CONDITIONS

Sullivan Marsh. Based on historical data, the potential for liquefaction continues to be more severe in fill soils in former marsh areas, (near Townsend Street) than in soils in Mission Bay.

In conclusion, the project area should be considered as an area susceptible to liquefaction during strong seismic shaking. The fill soils above the bay mud have been identified as having the highest potential for liquefaction. However, detailed site investigations in the project area may disclose other stratum which are also potentially liquefiable.

I.2.2 Hydrologic Resources

I.2.2.1 Tidal Data and Maximum High Tides: Basic Conditions and Constraints

The National Oceanic and Atmospheric Administration (NOAA) operates tide gauges at Rincon Point (Pier 22) and at Potrero Point. From these stations basic tidal data at the entrance to the China Basin Channel have been calculated.

Elevations at the site can be stated relative to several datum planes. These include the Mean Lower Low Water datum (MLLW), the National Geodetic Vertical Datum (NGVD), the San Francisco City Plane datum, and the datum used by KCA Engineers for its maps of the Mission Bay site. Table 1 shows these various datum planes relative to each other at the China Basin. Table 2 provides a brief definition of some of the basic terminology used. The range between MLLW and MHHW at the China Basin is 6.3 feet. Mean tide level is 3.4 feet above MLLW. (NOAA, 1985).

Table I
Water Surface Elevations

	Elevations (In Feet)			
	MLLW Datum	NGVD Datum	S.F. City Datum	KCA Engr. Datum
At China Basin				
MLLW	0.0	-3.0	-11.7	88.3
0.0 NGVD	+3.0	0.0	-8.7	91.3
Mean Tide Level	+3.4	+0.4	-8.3	91.7
MHHW	+6.3	+3.3	-5.4	94.6
100 Year Tsunami	+8.1	+5.1	-3.6	96.4
100 Year High Tide	+9.6	+6.6	-2.1	97.9
0.0 S.F. City Plane	+11.7	+8.7	0.0	100.0
Typical Ground Surface At Site	+8.7 to +14.7	+5.7 to +11.7	-3.0 to +3.0	97.0 to 103.0

I.0 EXISTING CONDITIONS

Various water elevations are cited in Table I, relative to several datum planes. The estimate listed of the 100 year high tide is the revised estimate of the U.S. Army Corps of Engineers in 1984. (USACOE, 1984). This estimated high tide reflects the effects of astronomical forces, barometric pressure fluctuations, and wind set-up. It does not reflect the effects of wave run-up. The estimate of tsunami wave run-up is based on a study performed at the U.S. Army Engineer Waterways Experiment Station (Garcia and Houston, 1975).

Some of the site at present is below the 100 year high tide elevation. All of the shoreline and banks of all tidal channels must be designed for these tidal and high water data.

1.2.2.2 Water Circulation and Water Quality Considerations

The watershed which originally drained into Mission Creek now drains entirely into the storm sewer system, and very little fresh water drains into the existing China Basin Channel at the site. The sewer system is a combined system transporting rainfall runoff with domestic and industrial sewage. During certain rainfall events the sewage system overflows into the Mission Creek channel.

During the dry season the water in the channel is basically the same as bay water. During periods of rainfall the water quality will be affected by sewage overflows.

During sewage overflows, the concentrations of various constituents depends on several factors. During small overflows there can be a high percentage of sanitary sewage, while during heavy runoff periods the constituents from the streets are higher. The first storm after an extended dry period carries a higher load of pollutants from the streets than those which follow.

I.0 EXISTING CONDITIONS

The length of time that overflow pollutants remain in the channel will depend on the tide conditions at the time of the overflow. A period of high tides provides stronger currents and flushing action. Previous studies have indicated that salinity, temperature, dissolved oxygen, pH colliforms and suspended solids have returned to normal levels three to four days after overflows had ended (CH2M Hill, 1979).

The frequency and quantity of overflows into the channel depends on the rainfall frequency and intensity, and on the status of the long term plans by the city for improvement of the sewage system. Prior to 1982 overflows occurred 40 to 50 times per year. City computer studies have estimated that the current improvements should lower these overflows to an average of 17 per year. Longer term plans would limit the number of overflows in an average to ten. (San Francisco City Planning Commission, Administrative Draft EIR, Mission Bay, 1982.)

1.2.2.3 Sedimentation in the Channel System

The major sediment source is mud carried into China Basin Channel by the tide. Another source is sewage sludge from sewage discharges. The most useful indications of sediment rates expected are historic hydrographic surveys, which are records of bottom contours and elevations compiled by soundings from survey crews in boats. By comparing these charts, the rate of accumulation of sediment in different bottom areas can be calculated. In artificial basins such as China Basin Channel, the actual sedimentation rate can be very high. Around San Francisco Bay, rates between 0.2 and 3 ft/year have been observed. As more shoaling takes place, the rate of siltation reduces as intertidal mudflats are formed. Eventually these mudflats are colonized by vegetation which acts to trap more sediment. Eventually a marsh plain is formed at about Mean High Water. At present relevant hydrologic maps have not yet been located to carry out this analysis.

1.0 EXISTING CONDITIONS

Additional information that would be useful, but has not been located, would be an analysis of samples of bottom sediments from numerous locations around the existing channel to determine how much sediment in each sample is from sewage overflows, and how much is from bay sediment. If no suitable records are found, a hydrographic survey of the existing channel should be performed.

1.3 Biological

The following information is derived from the Jefferson environmental analysis (1982). Site verification of 1982 observations will be conducted (a) when specific plan alternatives are being evaluated and (b) as part of the current Mission Bay Study EIR effort.

1.3.1 Vegetation

This historic bay site has been completely altered by the landfill for industrial development. China Basin Channel represents the residual water and vegetative open space within the site boundaries. These resources have also been altered or degraded by adjacent industrial uses. No natural vegetation exists on the site, nor rare or endangered species, although three rare plant locations have been reported approximately one-half mile south of the site. No suitable habitat is found in or near this site for these plants.

The undeveloped banks of the China Basin Channel show occurrences of marsh and marine vegetation typical of San Francisco Bay marshes. In particular, there are common pickleweed colonies at mean high tide level, algae zones in outer and middle portions of the channel, a marine macrophyte community on the rocks and pilings in the channel and introduced weeds and grasses, especially near the sewage pump station and overflow structure.

I.0 EXISTING CONDITIONS

I.3.2 Wildlife

The China Basin Channel is used by various water birds such as ducks, gulls, terns, shorebirds, pelicans, loons, grebes, cormorants, herons and egrets. Although the number of species using the area is relatively large, the actual numbers of individuals is low, largely because (a) many of these species are migrants who use the area occasionally, (b) the productivity of the aquatic community for a food source is degraded and (c) there is a lack of suitable vegetation for cover and breeding. The endangered California Brown Pelican is the only rare or endangered wildlife species that is likely to occur here. This will receive further evaluation in the Mission Bay Study EIR.

Terrestrial birds in the area include various species of songbirds typical of urban areas, pigeons and doves and one urban dwelling raptor, a sparrow hawk, was spotted in 1982. Terrestrial animals are limited to those species inhabiting industrial areas, such as mice, rats, gophers, dogs and cats. No large terrestrial animals were present in 1982 but harbor seals were known to be regular visitors to the outer reaches of the channel.

The dead end slough flushing characteristics found in the channel have degraded the sediment quality at the bottom of the channel. Ongoing sewage discharges during significant rainfall events have greatly reduced the aquatic habitat value of the channel, particularly upstream of the Fourth Street Bridge. In 1979 samples, there were significantly reduced numbers and species of typical estuarine organisms upstream of the Fourth Street Bridge. Sediments at the head of the channel were unsuitable for benthic organisms. Virtually no forage for fish existed east of the Fourth Street Bridge, and very little between the Fourth and Third Street bridges. The fairly representative fish community expected to live bayward of the Third Street Bridge are likely to follow the flood tide into the Channel to forage, then migrate outward. There are no rare or endangered fish species known to exist (as of 1979) or likely to inhabit the Channel or the Bay in the vicinity of the proposed project.

I.0 EXISTING CONDITIONS

I.4 Land Uses




I.4.1 On-Site Land Uses

Land north of the channel is presently and primarily used as parking for commuters, the Fourth Street I-280 off-ramp, the San Francisco Recreational Vehicle Park and for rail lines to the Caltrain Station at Fourth and Townsend Streets. Land south of the channel is used for industrial and warehousing activities or is vacant. In Figure 3, the site land uses are shown. Approximately 80 percent is in industrial use, in one or two story buildings with numerous truck docks. Most of the site's internal roads such as Fifth and Sixth Streets are periodically blocked partially by trucks using warehouse truck docks, since buildings are built to the outermost edges of parcels. Almost half of the site's 294 acres are under-utilized or vacant.

There has been very little turnover in the types of tenants using the site, although specific tenants have been replaced by others. Tenants occupying land and/or buildings on the site were identified in a 1985 analysis, which show that most of the current tenants on the site have 30-day or 60-day term lease agreements with Santa Fe Pacific Realty Corporation; however, there are several tenants with long term leases. The phasing of new development on the site may require either amendment of these lease agreements or phasing that avoids use of these tenants' sites until the leases come to full term. Leases that are currently scheduled to be in effect over the next thirty (30) years include the following tenants whose site locations are mapped on Figure 4.

EXISTING LAND USE

Figure 3

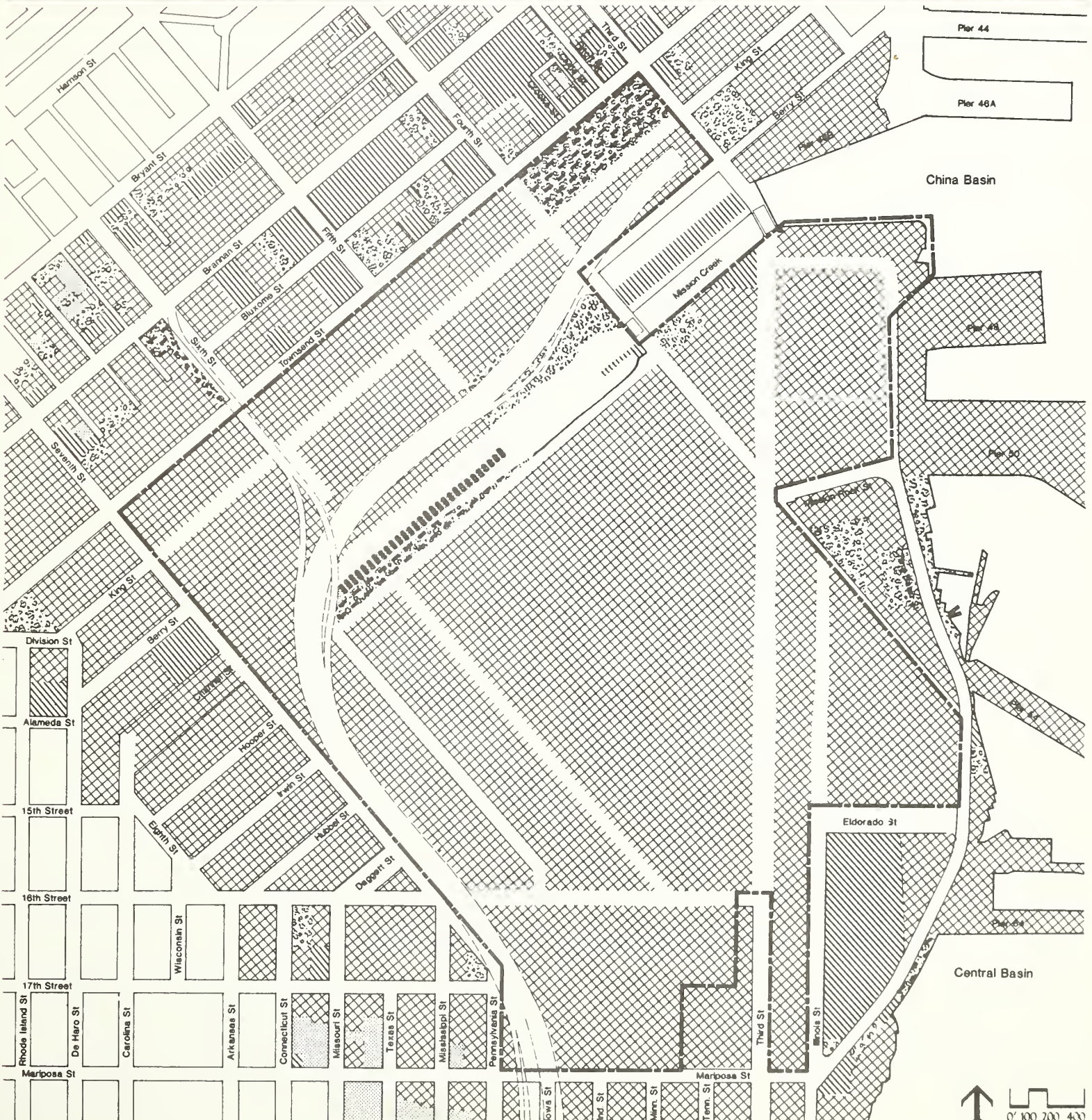
-  Office / Commercial
-  Industrial
-  Residential
-  Open Space
-  Vacant land / Parking
-  Houseboats / Boats


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 Parcels under long term leases

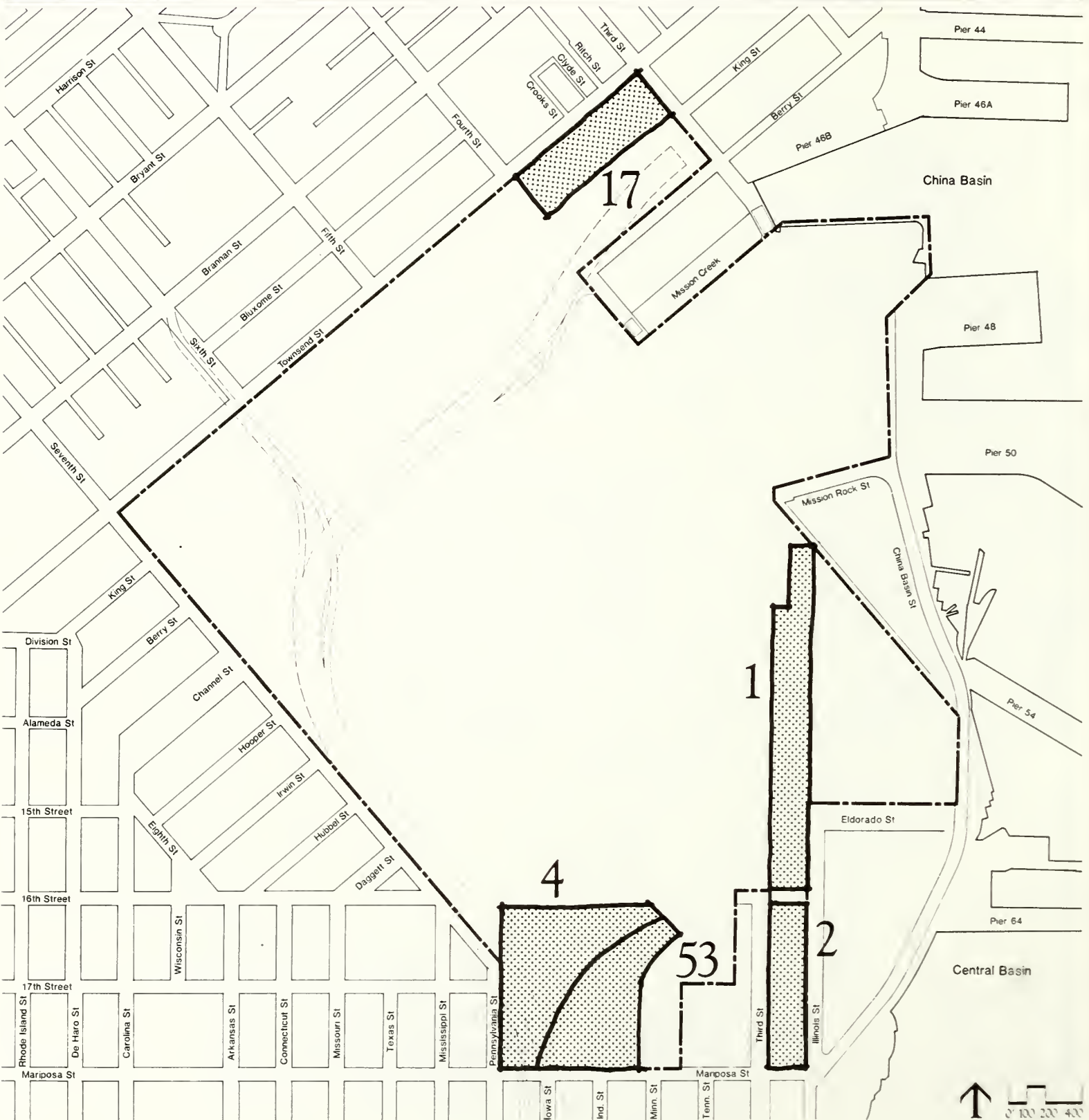
LONG TERM LEASES

Figure 4

Mission Bay San Francisco for the City and County of San Francisco Planning Department

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I.0 EXISTING CONDITIONS

Mission Bay Site Long Term Leases

Parcel Suffix	Tenant	Lease Expiration Date
.01	Kaiser Sand & Gravel	October 31, 1990
.17	S.F.R.V. Park	August 4, 1991
.02	Diamond Building Materials	October 31, 1997
.04	Robert Klotz	June 26, 2001
.02	C.J. Figone	March 9, 2013
.53	Zenith Distributing	February 28, 2016

I.4.2 Surrounding Land Uses

Surrounding land uses and land development trends throughout the area are expected to influence site development. Following is a summary of significant surrounding land uses, generally within two or three blocks of the edge of the site. The Mission Bay Study EIR will analyze these surrounding areas in much greater detail.

To the North: The South of Market area includes light and heavy industrial uses and office and office service uses, in buildings ranging in height from two to four stories that typically occupy the full extent of each site. Additionally there are some areas with a concentration of housing, as well as such facilities as the Moscone Convention Center, and entertainment areas with bars, restaurants and dance halls. Surface parking or outdoor storage areas occur intermittently. A few new office buildings have been built on Townsend Street and farther north and several former industrial warehouses have been remodeled for office use. This area also contains the I-280 Fourth Street off-ramp structure, which ranges from 43 feet above grade near Seventh Street, sloping to grade at Fourth Street. There is no public landscaped open space within these nearby South of Market blocks except the landscaping associated with the freeway on/off-ramps at Brannan and Sixth Streets. The Rincon Point-South Beach Redevelopment Area, in its South Beach portion

I.0 EXISTING CONDITIONS

would include a nearby Marina, a park and housing, as well as a historic warehouse structure. Further information is available regarding these areas from the Department of City Planning and the San Francisco Redevelopment Agency.

To the East: North of the China Basin Channel and east of Third Street, the Port of San Francisco conducts port maintenance facilities and services in and from a long three-story building fronting on the water. The Port of San Francisco operates maritime-related uses east of Third Street on the waterfront and on Piers 48 and 50. Those operations include the import, off-loading, storage and distribution of bulk paper on Pier 48 and coffee importation/storage/distribution, ship repair and Caltrain car construction on Pier 50. Pier 54 is used for ship repair. Pier 64 is derelict although it has been considered for maritime uses. These areas are all served by rail from a major switchyard west of China Basin Street and by trucks using China Basin Street. Later sections of this report address use of this area for maritime containerization.

To the South: To the south of Mariposa Street are older industrial buildings, warehouses, utility sites and a few residential buildings. A residential community is farther to the south known as Lower Potrero Hill. At the southeast corner of the site is the Esprit Headquarters, and to the south, a Muni bus facility. Buildings are built with full lot coverage and range in height from two to six stories.

To the West: I-280 (at 47 to 57 feet above grade) forms most of the westerly edge of the site, with railroad tracks 150-feet in width underneath it. No permanent buildings exist in the right-of-way. Uses beyond the freeway include warehouse and wholesale activities extending to the Potrero Hill neighborhood to the southwest which has been experiencing gentrification. In the revitalized Showplace Square area near the northwest portion of the site private planning efforts are underway by an association of Showplace Square property owners, and the Department expects to undertake planning efforts in the area to address the intensification of those uses.

I.0 EXISTING CONDITIONS

I.4.3 Zoning

The majority of the project site is within an M-2 (Heavy Industrial) district (see Figure 5). The M-2 district allows a wide variety of industrial, commercial, institutional and residential uses. Permitted principal uses include heavy industrial manufacturing, light industries within enclosed buildings, steam power plants, railroad facilities, shipyards, storage yards, laboratories, public structures, wholesale warehouses, automotive sales and services, business services, assembly and entertainment facilities, offices, retail commercial and animal services. Conditional uses include residential dwellings at a density of not less than 1 unit per 800 square feet, planned unit developments, hotels, motels, truck terminals, petroleum refineries, steel mills and stockyards. The basic floor area ratio (FAR) for the M-2 district is 5.0 to 1.

A one block area within the project site containing a recreational vehicle park is within a C-M (Heavy Commercial) district. The C-M district is designated for certain heavy commercial uses not allowed in other commercial districts, primarily including wholesaling, business services, light manufacturing and processing. This district has an FAR of 9.0 to 1.

Areas south of the project site are also primarily zoned within an M-2 district. To the north, South of Market areas abutting this site are proposed for Light Industrial and Office uses with accessory Residential uses. The South Park area and an area at the base of Potrero Hill contain a mixture of light industrial, commercial and residential zonings. A strip of land along the south side of the China Basin Channel is within a P (Public Use) district. This zoning district includes governmental and public structures, churches, utilities, and open space. South Park, the Agua Vista Park Area and a few other parcels are also within P districts. The FAR for the residential zoning districts in the study area is 1.8 to 1 while the C-2 District has an FAR of 3.6 to 1.

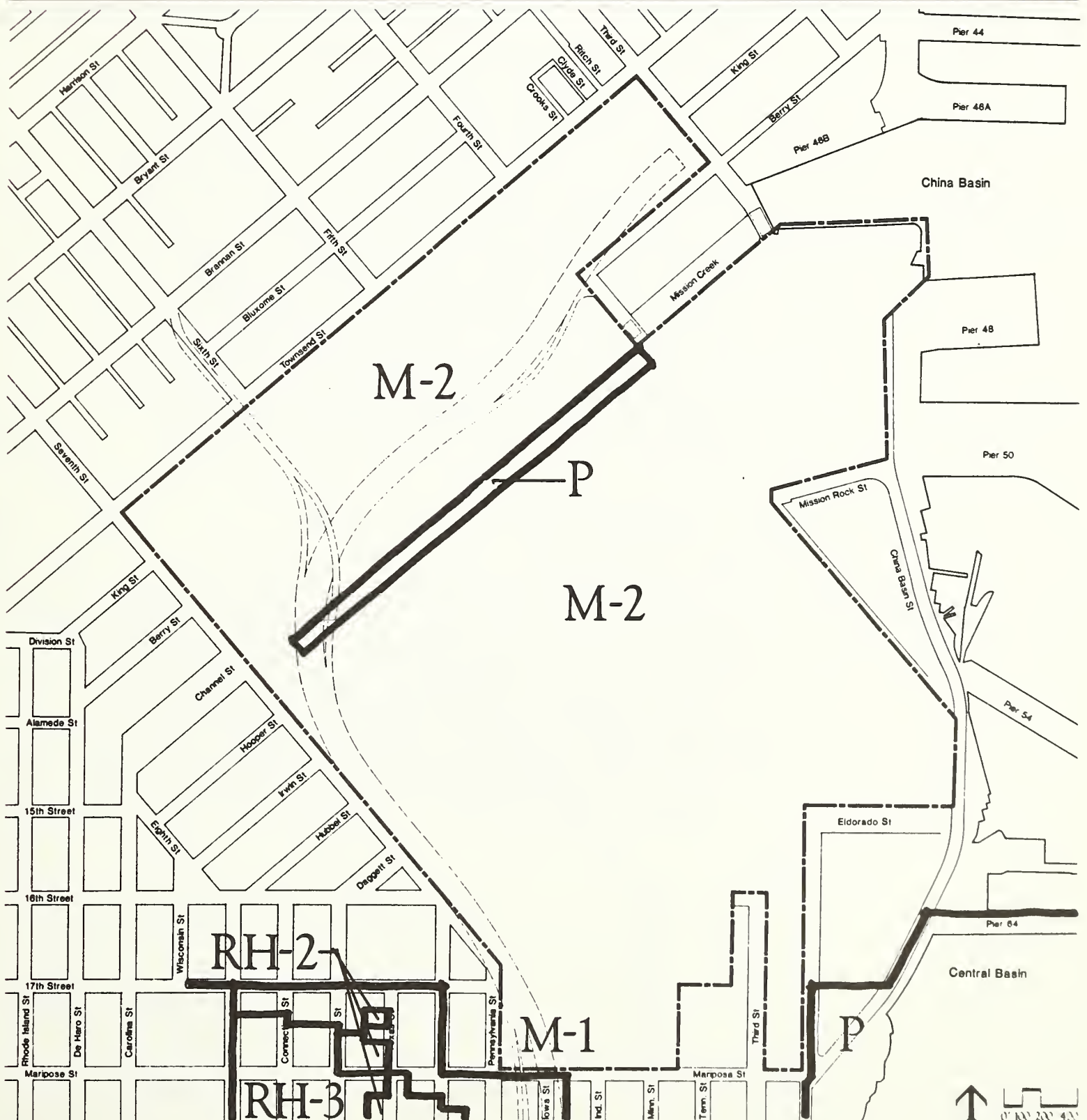


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1.0 EXISTING CONDITIONS

The project site is located in five Height and Bulk Districts (see Figure 6). The northern area of the site is located in 50X and 40X Districts in which the maximum permitted heights are 50 feet and 40 feet respectively. Proposed FAR's for this area are 2.5—4.0 to 1. The central area of the site south of the China Basin Channel is located in 200-E and 130-B Districts. The 200-E District has a maximum permitted height of 200 feet. Above a height of 65 feet, the maximum permitted building length is 110 feet and the maximum permitted horizontal diagonal dimension is 140 feet. The 130-B District with a maximum permitted height of 130 feet has a maximum permitted building horizontal diagonal dimension of 125 feet above a height of 50 feet. The areas of the site to the east of Fourth and Third Streets and to the south of Sixteenth Street are in an 80-B District which has a maximum building height of 80 feet. The maximum permitted building length and horizontal diagonal dimension is the same as the 130-B District.

1.5 Existing Transportation Conditions

1.5.1 Introduction

This report is based on data collected in 1981 and 1982 by DKS Associates. Counts of traffic, transit and freight service activities are being collected by Barton/Ashman Associates in October 1985 for the Mission Bay Study Environmental Impact Report (EIR) and will be inserted with this document as they become available. It is not expected that there will be any substantial change from the condition described below based on the replacement of 1982 by 1985 data. However, should any major changes in condition be noted over the past 2 or 3 years, the existing conditions report will be revised to reflect these changes.

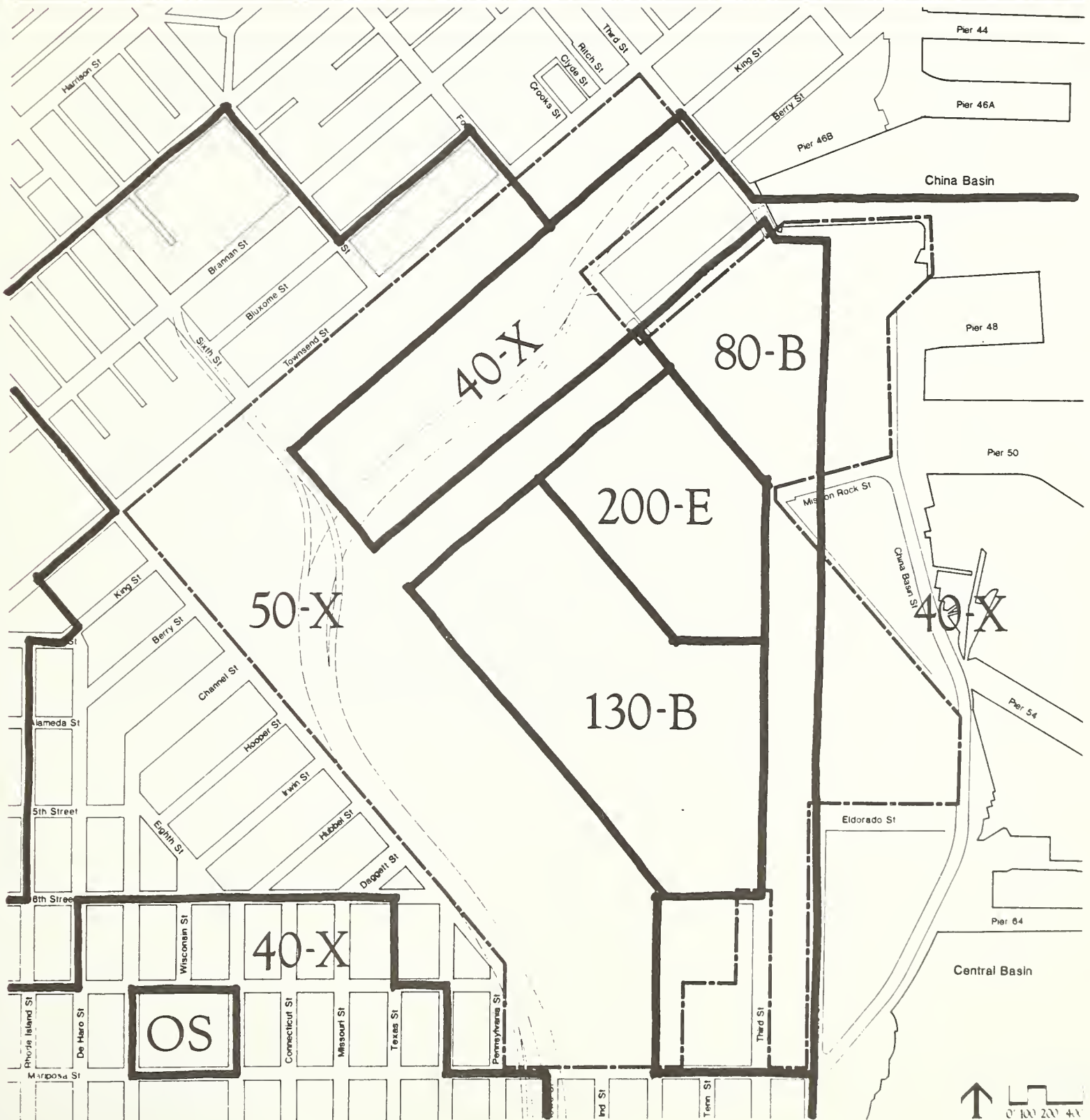
BUILDING BULK AND HEIGHT

Figure 6

Mission Bay San Francisco for the City and County of San Francisco Planning Department

EDAW inc.
ELS/Elbasani & Logan Architects
Danadjieva & Koenig Associates
Daniel Solomon and Associates
Gabriel-Roche, Inc.

KwanHenmi Architects
Carl Anthony & Associates
Robert L. Harrison
Philip Williams & Associates
McGuire & Company



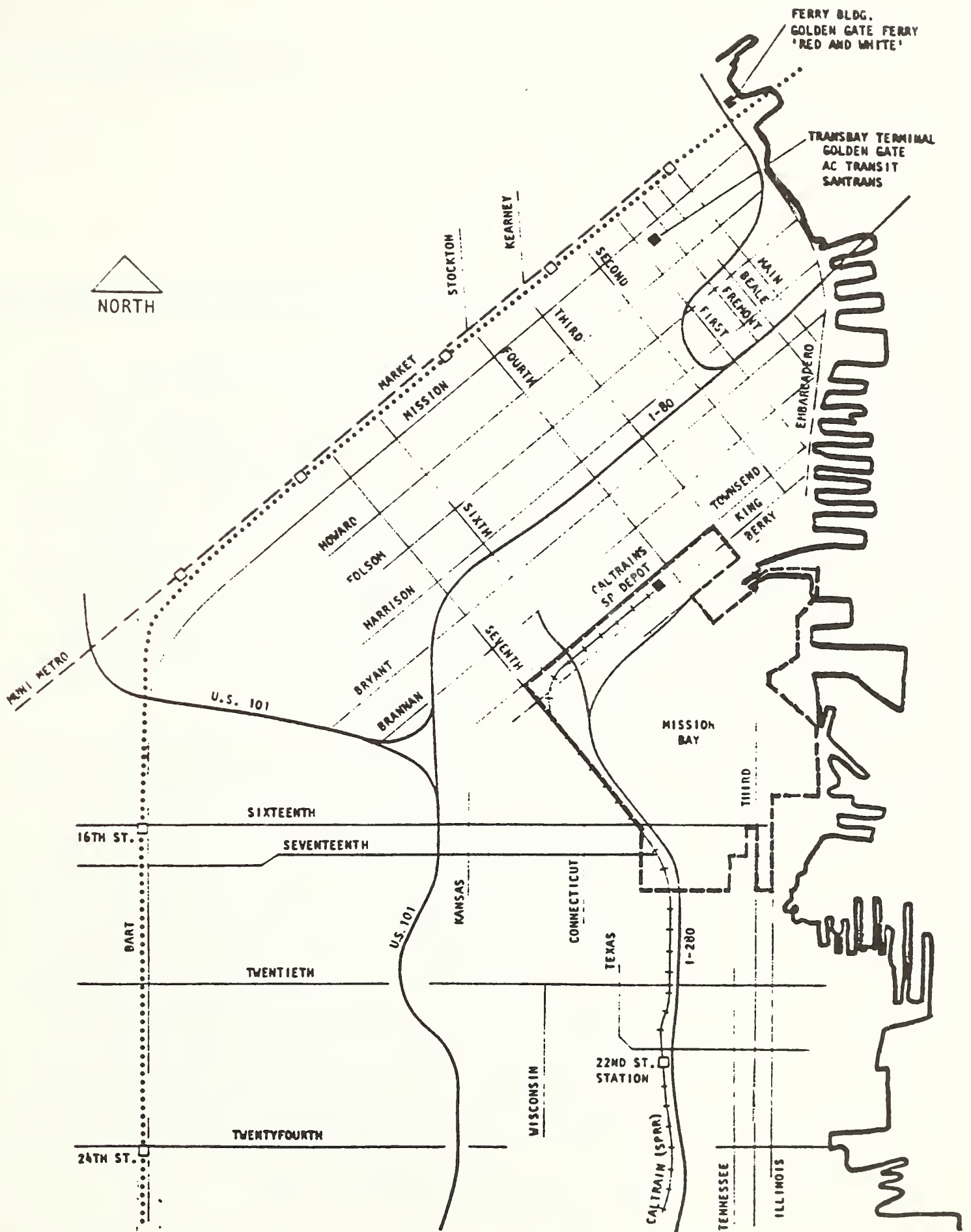
I.0 EXISTING CONDITIONS

The site is generally bounded by Townsend, China Basin, Mariposa and Seventh Streets. Regional access to/from Mission Bay is excellent with linkage provided by several major freeways and transit services. Figure 7 shows the relationship of the site to major regional highway and transit facilities and the local street system.

I.5.2 Streets and Highways

Freeway access to and from the east is provided by Interstate 80 (across the Bay Bridge). Surface streets link Mission Bay to Marin County and areas to the north via the Golden Gate Bridge. U.S. 101 links Mission Bay to southern portions of San Francisco, San Mateo County and areas to the south. Interstate 280 provides linkage to southern and southwestern San Francisco and to the Peninsula. I-280 terminates just north of the project site. Both I-80 and U.S. 101 regularly become congested during commute hours in the respective peak directions, but I-280 operates well below capacity even during peak hours, except at its interchange with Sixth Street.

Access to I-80 eastbound from the project site is available from Eighth, Fifth, and Sterling (off Second) Streets. Westbound exits serving Mission Bay are provided to Fifth and Eighth Streets. Access to U.S. 101 is available from Fourth, Seventh and Tenth Streets, and exits are provided to Ninth, Seventh and Fourth Streets. Access to I-280 is available from Mariposa and Sixth Streets, and exits are provided to Mariposa, Sixth, and Fourth Streets.



I.0 EXISTING CONDITIONS

The existing surface street system around the site is somewhat discontinuous because of barriers posed by the China Basin Channel, the Peninsula Commuter rail trackage and Depot and the I-280 freeway viaduct. Although most streets north of the site provide high capacity, access is constrained by the Caltrain Station, associated tracks, and the China Basin Channel. Traffic flow is further restricted by the presence of many buses, heavy pedestrian activity, and on-street parking near the Peninsula commuter-rail terminal. All streets between Second and Tenth are major north/south arterials, but only Third, Fourth, and Seventh Streets extend south of the Peninsula commuter-rail line into the Mission Bay project area. Major east/west facilities include Harrison, Bryant, Brannan, Townsend, and Berry Streets. Most of the intersections between these streets are signalized with simple two or three-phase controllers.

Third and Fourth Streets cross the China Basin Channel via two open-span drawbridges of 1930's vintage. These streets form a one-way couplet between Berry and Market Streets, with four northbound lanes on Third Street and four southbound on Fourth Street. Both facilities are two-way south of Berry Street across the drawbridges, where Third Street provides four travel lanes while Fourth provides two lanes northbound but only one southbound. The drawbridges are operated and maintained by the San Francisco Department of Public Works, under the jurisdiction of the U.S. Coast Guard. A bridge tender is on duty 24 hours a day, and there are no restrictions on hours of opening. The Third Street Bridge is opened about 100 times a month, and the Fourth Street Bridge is opened about 50 times a month. Both bridges can be opened during commute hours as required, but most openings occur on weekends and holidays. Bridge openings typically close the road to traffic for about five minutes, but in some cases (e.g., slow moving sailboats) can stop traffic for up to ten minutes.

Table 2
LEVEL OF SERVICE INTERPRETATION

<u>Level of Service</u>	<u>Description</u>	<u>Average Vehicle Delay (Seconds)</u>	<u>Volume to Capacity Ratio</u>
A	Free Flow. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Insignificant delays.	0-16	0.0-0.59
B	Stable Operation. An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. Minimal delays.	16-22	0.60-0.69
C	Stable Operation. Major approach phase may become fully utilized. Most drivers feel somewhat restricted. Acceptable delays.	22-28	0.70-0.79
D	Approaching Unstable. Drivers may have to wait through more than one red signal indication. Queues develop but dissipate rapidly, without excessive delays.	28-35	0.80-0.89
E	Unstable Operation. Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection. Significant delays.	35-40	0.90-0.99
F	Forced Flow. Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections. Excessive delays.	40 or greater	1.00 and above

Source: "Highway Capacity Manual," Highway Research Board, Special Report No. 87, Washington, D.C., 1965.

"Interim Materials on Highway Capacity," Transportation Research Board, Circular No. 212, Washington, D.C., January 1980.

I.0 EXISTING CONDITIONS

Seventh Street extends south of the Caltrain Station area immediately adjacent to I-280. This facility provides two-way travel south of Brannan Street. North of Brannan, Seventh Street becomes a one-way street which provides four northbound lanes up to Market Street. Seventh and Eighth Streets form a one-way couplet between Brannan and Market Streets, as do Ninth and Tenth Streets with Ninth northbound and Tenth southbound. All of these facilities provide four lanes through this area.

Second, Fifth and Sixth Streets are all two-way and generally provide two lanes per direction. Second Street ends at Berry Street, Fifth terminates at Townsend, and Sixth runs directly into the major I-280 ramps.

Brannan and Townsend Streets are both two-way streets with two lanes in each direction. Both facilities serve as arterials east of the I-280 ramps but are used much less toward the west.

Berry Street is three lanes eastbound from the I-280 off-ramp to Third Street, where all three lanes can turn left onto Third Street. West of Third, Berry is discontinuous due to the presence of the freeway structure and rail trackage.

Most roadways south and west of the project site are residential and/or industrial in nature. May have severe grade profiles. For these reasons their utility in accessing the site except for immediate local area trips is limited. Third Street is the major north/south arterial, providing two-way operation across four lanes. Sixteenth Street is a major east/west arterial to the south of the site, varying between two and four lanes. This roadway is a connection to the areas west of U.S. 101, but no interchange is available.

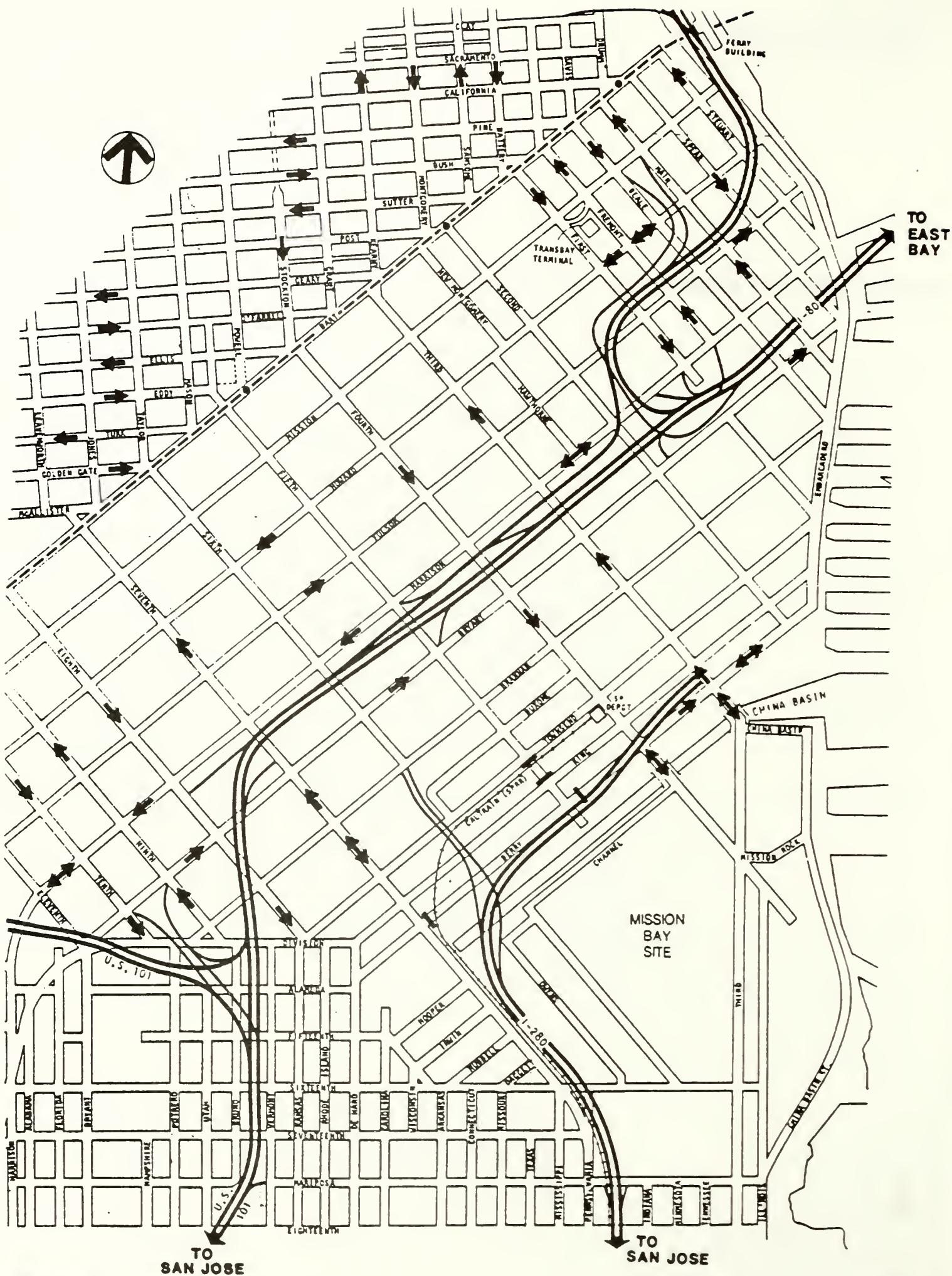
I.0 EXISTING CONDITIONS

Two blocks farther south, Mariposa Street connects the site to an interchange with I-280. Mariposa also interchanges with U.S. 101. However, Mariposa becomes residential in character and has steep grades west of I-280, making the connection to U.S. 101 ineffective in serving the site.

Figure 8 shows the pattern of one-way streets in the vicinity of Mission Bay. 1981/82 peak hour freeway and ramp volumes are shown in Figures 9 and 10 for the a.m. and p.m. commute peak hours. Surface-street volumes are shown in Figure 11 and 12 for the a.m. and p.m. peak hours, respectively. As shown, the majority of all east/west traffic is carried on Harrison, Bryant, and Brannan Streets, while Third and Sixth Streets are the major north/south facilities. Inbound I-280 traffic splits between the Sixth and Berry Street off-ramps, but outbound traffic is forced to use Sixth Street since an on-ramp is not available from Fourth Street.

Figures 13 and 14 present 1981-82 a.m. and p.m. peak hour "levels of service" at key intersections in the vicinity of Mission Bay.¹ "Level of Service" is a concept to correlate numerical traffic volume and roadway capacity data to subjective descriptions of traffic performance. Table 2 explains the "level of service" concept. While most intersections close to the site operate at satisfactory levels of service or can be readily modified to do so, deficiencies at intersections along Bryant Street are the result of freeway congestion producing entry queues which obstruct the surface street intersections.

¹ These calculations will be revised as needed based on 1985 traffic counts. For computations or source references for traffic counts and level of service representations in the Figures 4-9, see Technical



EXISTING AM PEAK HOUR FREEWAY VOLUMES

figure 9

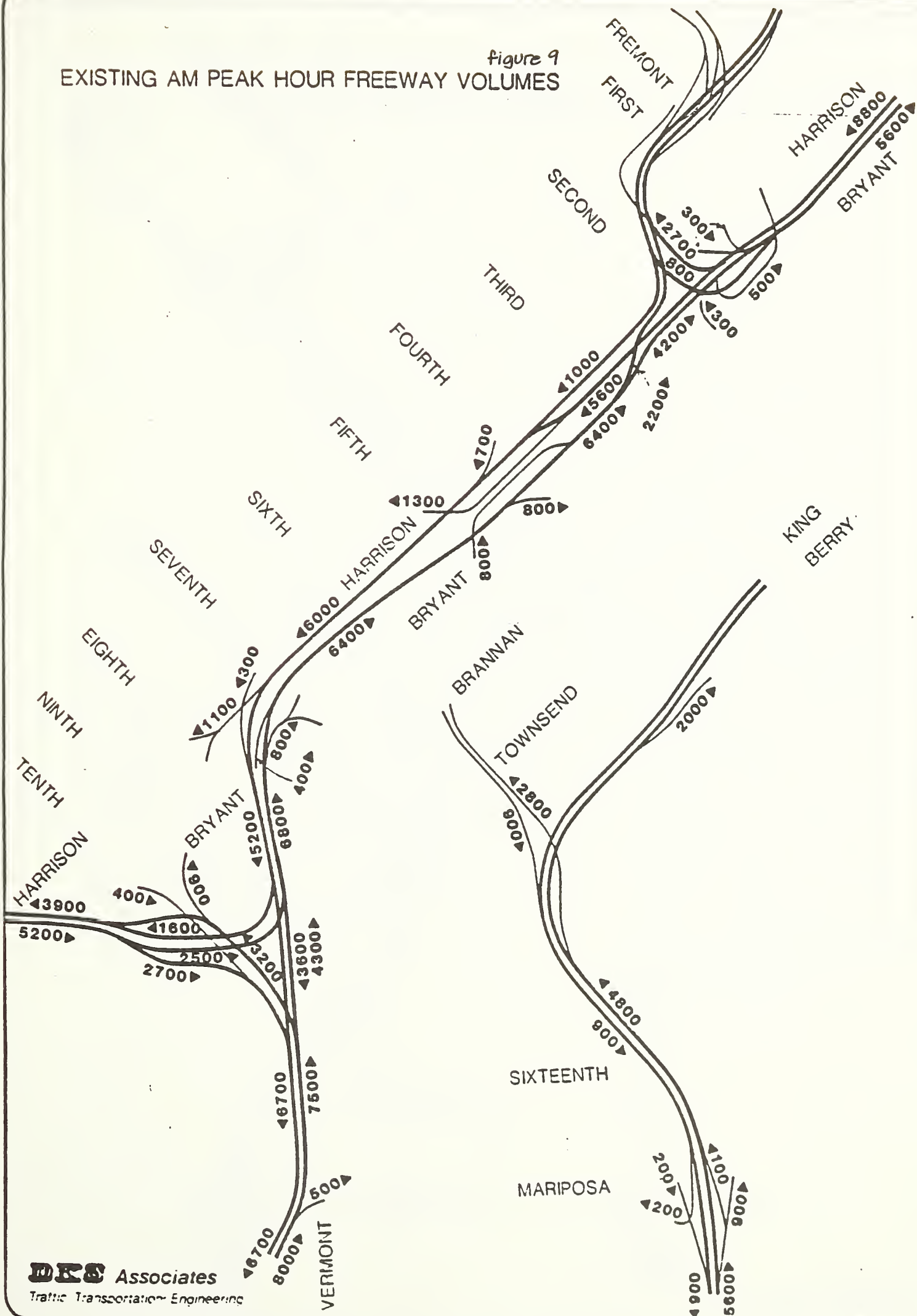


Figure 10
EXISTING PM PEAK HOUR FREEWAY VOLUMES

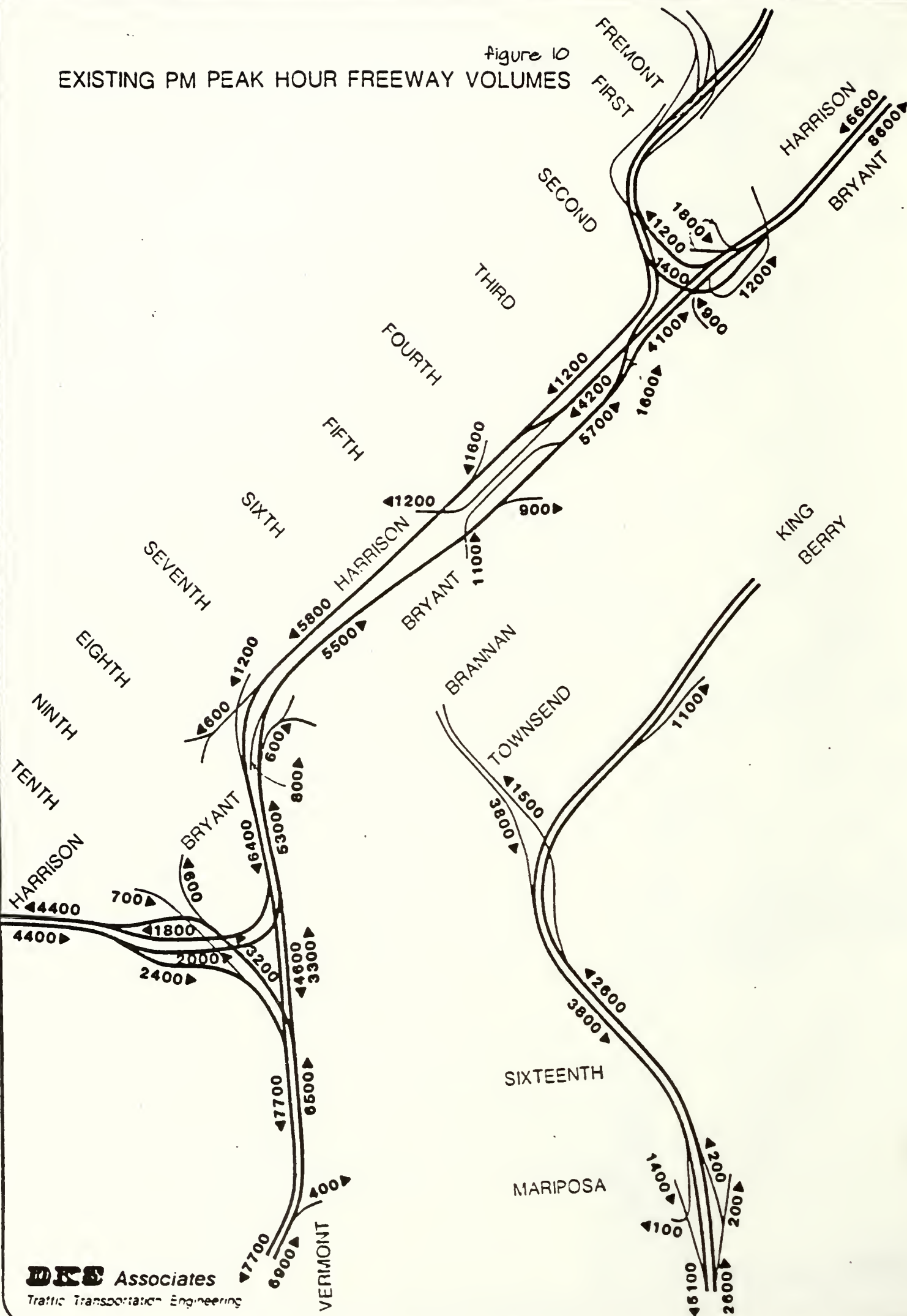


Figure 11
EXISTING AM PEAK HOUR ROADWAY VOLUMES

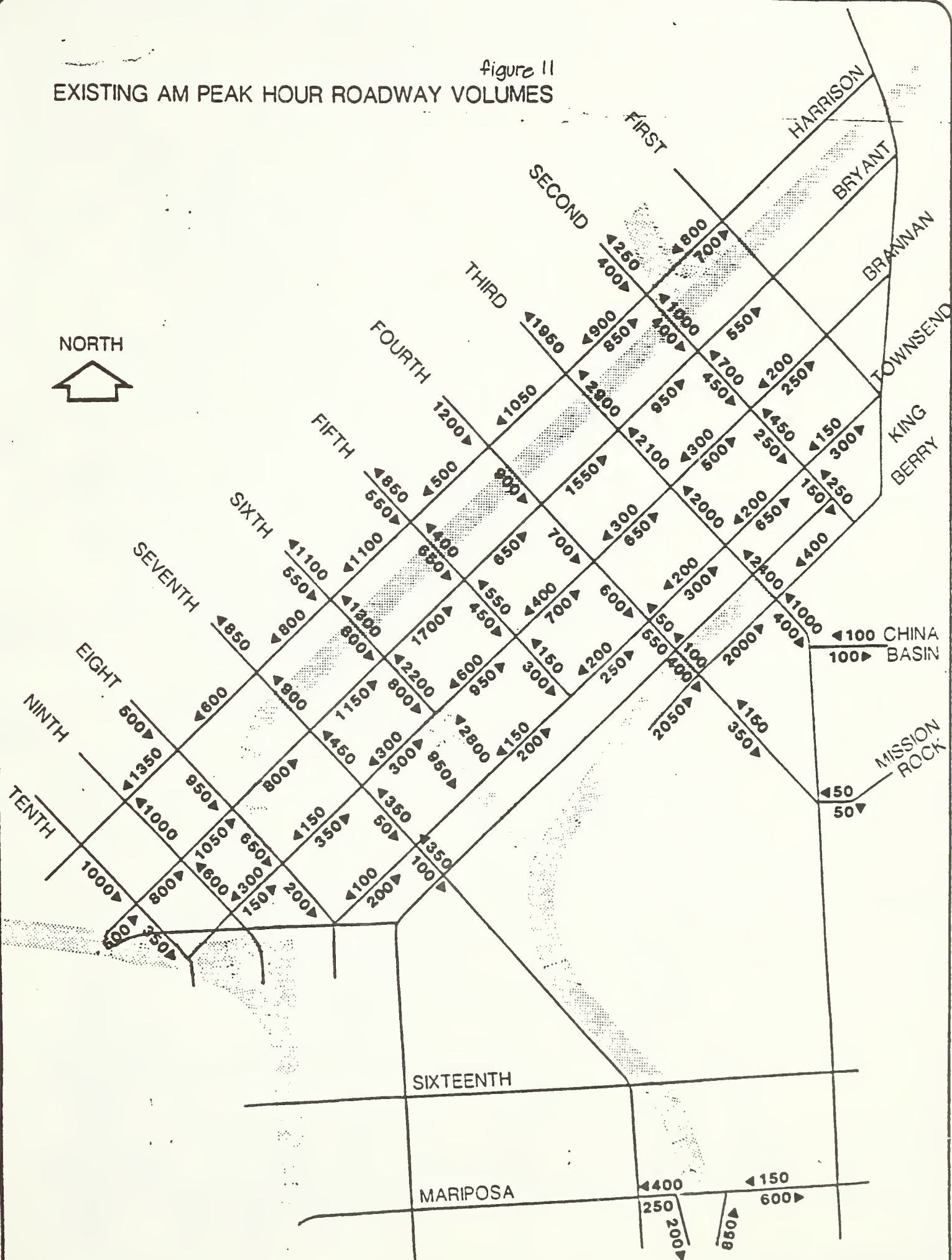
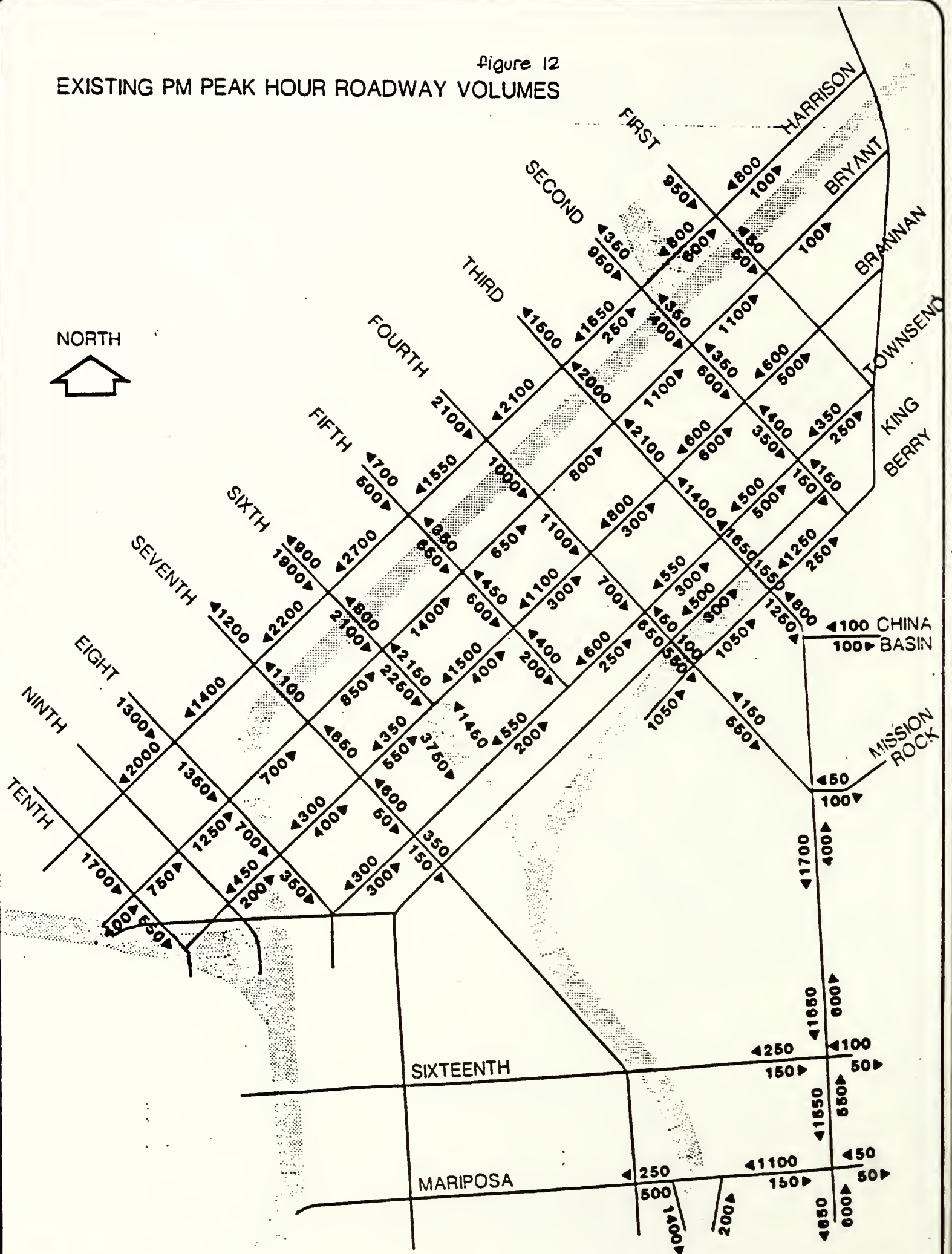
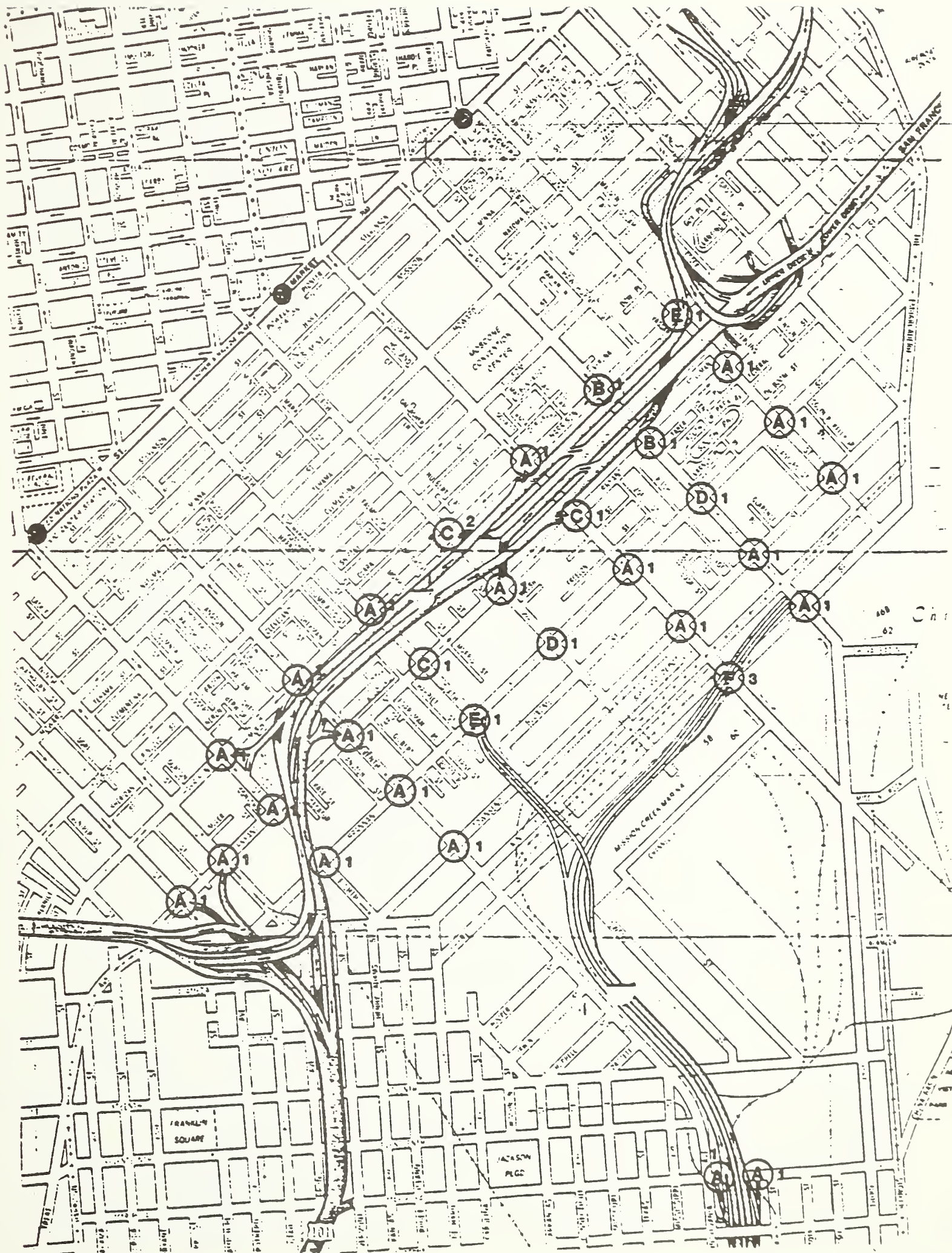


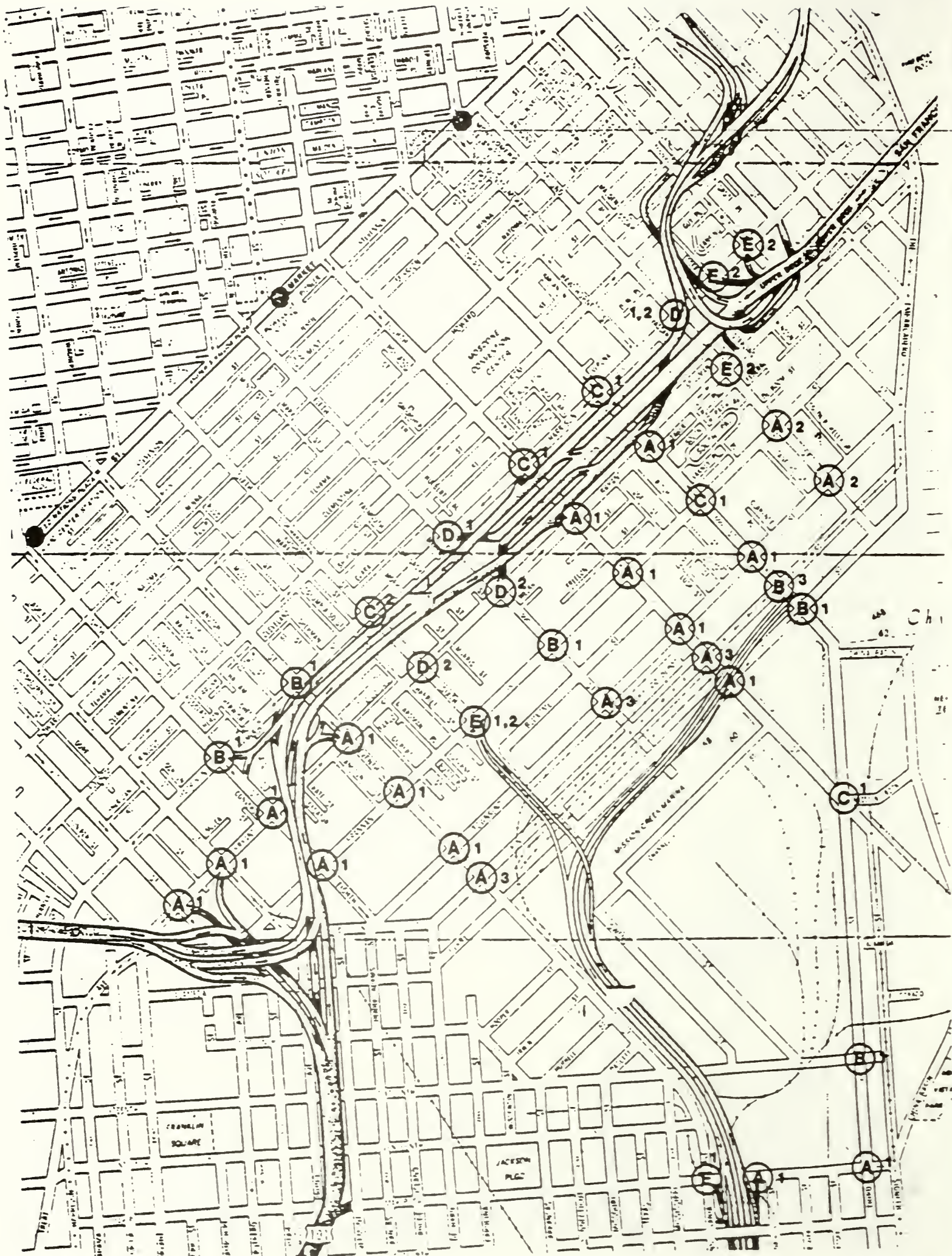
Figure 12
EXISTING PM PEAK HOUR ROADWAY VOLUMES





- 1 Computed by DKS
- 2 Estimated by observation
- 3 Reported by others

figure 13
EXISTING LEVEL OF SERVICE - AM PEAK HOUR



- 1 Computed by DKS
- 2 Estimated by observation
- 3 Reported by others

Figure 14
EXISTING LEVEL OF SERVICE - PM PEAK HOUR

Table 2
LEVEL OF SERVICE INTERPRETATION

<u>Level of Service</u>	<u>Description</u>	<u>Average Vehicle Delay (Seconds)</u>	<u>Volume to Capacity Ratio</u>
A	Free Flow. No approach phase is fully utilized by traffic and no vehicle waits longer than one red indication. Insignificant delays.	0-16	0.0-0.59
B	Stable Operation. An occasional approach phase is fully utilized. Many drivers begin to feel somewhat restricted within platoons of vehicles. Minimal delays.	16-22	0.60-0.69
C	Stable Operation. Major approach phase may become fully utilized. Most drivers feel somewhat restricted. Acceptable delays.	22-28	0.70-0.79
D	Approaching Unstable. Drivers may have to wait through more than one red signal indication. Queues develop but dissipate rapidly, without excessive delays.	28-35	0.80-0.89
E	Unstable Operation. Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection. Significant delays.	35-40	0.90-0.99
F	Forced Flow. Represents jammed conditions. Intersection operates below capacity with low volumes. Queues may block upstream intersections. Excessive delays.	40 or greater	1.00 and above

Source: "Highway Capacity Manual," Highway Research Board, Special Report No. 87, Washington, D.C., 1965.

"Interim Materials on Highway Capacity," Transportation Research Board, Circular No. 212, Washington, D.C., January 1980.

Existing motor vehicle trip generation for the entire site is given on Table 3. The site is estimated to generate 454 peak direction (inbound) vehicle trips in the a.m. peak hour and 487 peak direction (outbound) trips in the p.m. peak hour. If the existing uses on the site were in full scale operation, several times this level of traffic activity might be experienced.

1.5.3 Public Transit

Transit service to/from the site is provided by ten MUNI lines and the Caltrain commuter rail service as shown on Figure 15. The MUNI lines connect the site with other city-wide and regional transit services, including MUNI Metro light rail lines, BART, AC Transit, SamTrans, Golden Gate Transit buses and ferries, and Red and White Fleet ferries. Location of the Caltrain Station within the site makes rail service particularly attractive to Peninsula commuters to/from Mission Bay.

1982 peak period ridership levels and respective capacities are shown in Table 4 for all MUNI lines serving the site, and in Table 5 for regional transit services. As shown, several MUNI lines are currently running at or close to capacity, as is BART to/from the East Bay and SamTrans.

1.5.4 Rail Freight

Freight yards on the easterly portion of the site (east of Third Street) have become inactive with the decline of rail shipping industries in San Francisco and can be removed with no effect on area rail freight service. Figure 16 shows existing rail services in the Mission Bay area. Table 6 describes current (1984) rail freight activity in the Mission Bay area. The total of all current rail users is approximately 200 rail cars per month.

I.0 EXISTING CONDITIONS

Table 3
EXISTING TRIP GENERATION

Land Use Size	AM Peak Hour			PM Peak Hour			Daily Two-Way
	In	Out	Total	In	Out	Total	
Trucking ² 45 Acres							
Trip Ends/Acre	3.1	4.6	7.7	3.0	3.4	6.4	82.0
Trip-Ends	140	205	345	135	155	290	3,690
Industry ² 35 Acres							
Trip-Ends/Acre	7.9	1.4	9.3	4.0	8.0	12.0	60.0
Trip-Ends	275	50	325	140	280	420	2,100
Warehouse ² 4 Acres							
Trip-Ends/Acre	4.9	4.9	9.8	10.1	10.1	20.2	62.0
Trip-Ends	20	20	40	40	40	80	250
Restaurant ³ 5,000 Sq.Ft.							
Total Trip Ends	14	9	23	13	7	20	120
R.V. Park ⁴ Spaces							
Trip-Ends	5	40	45	40	5	45	170
Total Site							
Trip-Ends	454	324	778	368	487	855	6,330

Source: DKS Associates

- ¹ Expressed in terms of vehicle-trip-ends.
- ² These rates were taken from Trip Generation - An Informational Report, Institute of Transportation Engineers, 1979.
- ³ Trip rates were estimated from information supplied by the restaurant managers.
- ⁴ These rates were supplied by the park operator, assuming an average stay of three days, and that half of the users arrive/leave during peak hours.

figure 15



Table 4
Muni Service to the Mission Bay Area

1982 P.M. Peak Hour Ridership and Capacity

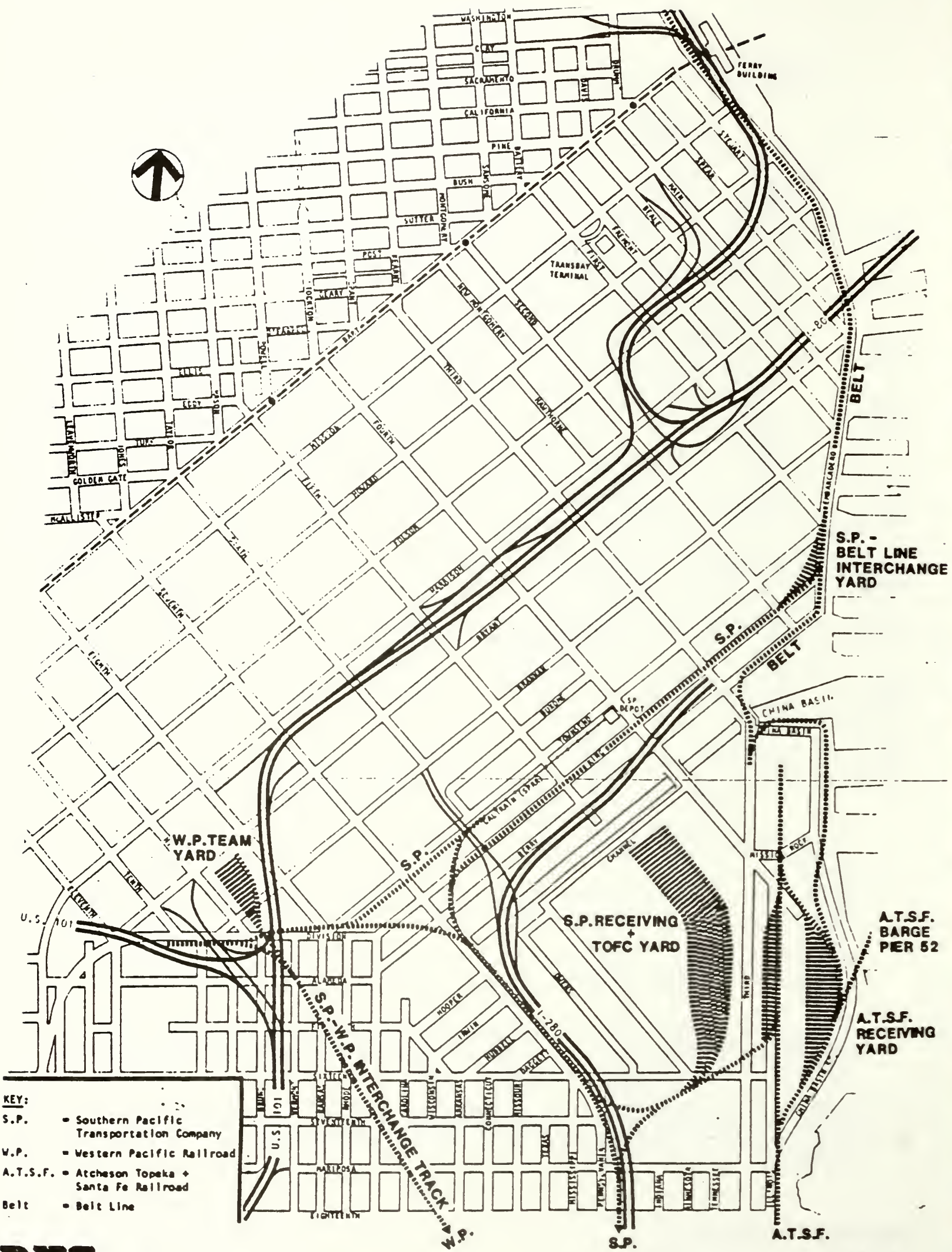
<u>Line</u> ¹	<u>Stop Closest to Site</u>	<u>Destinations</u> ²	<u>Ridership</u> ³	<u># Buses/hr.</u>	<u>Load Capacity</u> ⁴	<u>Factor</u>
15- Third	SP Depot	DT, Wharf, City College	1,020	15	1,125	0.91
19- Polk	8th/Townsend	DT, Wharf, Portrero	610	8	600	1.02
22- Fillmore	3rd/18th	Marina	N.A.	12	900	N.A.
27-Noe	4th/Townsend	Noe, DT	180	4	300	0.60
30- Stockton	SP Depot	Marina, DT	1,230	20	1,500	0.82
32- Embarcadero	SP Depot	Wharf, DT	480	10	750	0.64
42-Loop	SP Depot	Civic Center, Wharf, DT	265	5	375	0.71
80X- Gateway Exp.	SP Depot	DT	500	7	525	0.95
81X- Caltrans Exp.	SP Depot	DT	N.A.	12	900	N.A.

¹ Lines within walking distance (2,000 feet) of the site, as described by the MUNI Transit Routes map of January 1982.

² "Wharf" refers to the Fisherman's Wharf area, and "DT" indicates lines which pass through the downtown area and/or connect to regional transit services.

³ Ridership levels are based on data provided in the Environmental Evaluation Guidelines, Department of City Planning, October 1980, assuming a 15 percent growth factor over the two years preceding 1982.

⁴ Capacities were calculated from headway data provided in the MUNI Guide to Frequency of Service, assuming a 75-passenger maximum per bus (including standees).



- KEY:**
- S.P. = Southern Pacific Transportation Company
 - W.P. = Western Pacific Railroad
 - A.T.S.F. = Atcheson Topeka + Santa Fe Railroad
 - Belt = Belt Line

Table 5

Regional Transit Services to/from the City

Transit Service	1982 Peak Period Ridership and Capacity ¹				
	Ridership	Seating Capacity	Total Capacity ²	Load Factor ³	Load Capacity
BART ⁴					
Trans Bay	13,600	10,084	13,100	1.04	16,900
Daly City	6,450	6,984	9,100	0.71	15,150
AC Transit ⁵	8,900	8,700	10,900	0.82	9,500
Golden Gate Transit	0	0	0	0	0
Southern Pacific ⁶	4,000	5,300	5,300	0.75	8,200
SamTrans ⁷	2,900	2,900	3,200	0.91	3,300
Buses ⁸	8,400	9,936	11,900	0.71	11,900
Ferries ⁹	2,100	1,820	2,650	0.79	4,600
Red & White Ferries ¹⁰	400	1,200	1,350	0.30	12

¹ All data sets represent the most critical peak for that transit service based on standards in effect in 1982.

² Including the respective number of standees allowed on each transit service.

³ In this case, load factors represent the ratios of ridership levels to respective total capacities.

⁴ Data is for outbound service during the PM peak hour as compiled by BART Planning and Analysis Staff in March of 1982. BART uses a standard load factor of 1.30 for planning purposes.

⁵ Data is for inbound service during the AM peak hour as provided by Ted Reynolds of AC Transit, and assuming an allowable load factor of 1.25.

⁶ Based on individual train checks outbound during the PM peak hour, assuming that no standees are allowed.

⁷ Data is for inbound service during the AM peak period as shown in the SF DTIP, assuming an average allowable load factor of 1.10.

⁸ Data is for inbound service during the AM peak period from 7:00 to 9:00 as described in the San Francisco Downtown Transportation Improvement Plan (DTIP) and assuming a maximum load factor of 1.20.

⁹ Data is for outbound service during the PM peak period (approximately two hours) as provided by Jerome Kuykendall of Golden Gate Transit.

¹⁰ Data is for inbound service during the AM peak period as described in the SF DTIP.

¹¹ Planned 1987 capacity based on current programs of the respective operating agencies.

¹² Total ferry capacity.

Table 6

Existing Rail Freight Activity¹
(June 1984)

<u>Rail User</u>	<u>Cars Per Month</u>	<u>Rail Carrier</u>
o North of Mission Bay		
Office Environments, 2 Bryant St.	8/month	Kyle (Belt Line)
Dispatch Transfer, ? Berry St.	5-10/month	Kyle (Belt Line)
o West of Mission Bay		
Heinzer & Sons, 933 Treat Ave.	1/month	Southern Pacific (SP)
Best Foods, ? Florida St.	20/month	SP
Lone Star/Bode, 386 Alabama St.	2/month	SP
Canned Foods, 1717 Harrison St.	8/month	SP
Sobbel Liquor, ? 8th St.	8/month	SP
Independent Recyclers, ? 16th St.	20/month	Webster/Union Pacific (WP/UP)
San Francisco Building Materials, ? De Hare St.	2-3/month	SP
Hexol, 1500 17th St.	1/3/month	Santa Fe (ATSF)
Glidden, 1000 16th St.	9/month	ATSF
o Within Mission Bay Project Boundary		
Kaiser Sand & Gavel, 300 16th St.	100/month	ATSF
Jamieson, ? 3rd St.	100/month	ATSF

¹ Date subject to confirmation by Santa Fe Pacific Realty Corporation.

Source: Survey of rail freight users conducted by the Department of City Planning, 1984.

1.0 EXISTING CONDITIONS

A lead track currently links the Mission Rock terminal area (east of Third Street) with the Southern Pacific mainline, crossing both Third and Sixteenth Streets at grade. The Port of San Francisco's current development concept for the Mission Rock Terminal (Pier 50) would mean abandonment of this lead along with the Atcheson Topeka and Santa Fe Interchange Yard it services.

The San Francisco Belt Line Railway is connected to the Southern Pacific mainline via a track in King Street.

The Mission Bay Freight Yard has a 500 railcar per day capacity. About 11 percent of this capacity was in use in 1981. Southern Pacific Transportation (SPT) Company has considered several options for replacing the function of the Mission Bay Yard.

1.5.5 Maritime Freight Movement

Mission Bay is flanked on the east by the Port of San Francisco's Mission Rock Terminal (Piers 48, 50, 52, 54) as shown on Figure 17. Mission Bay is also flanked by rail lines and roadways related to the Port's overall operations so it is appropriate to consider here the overall activities of the Port. (The glossary provided in Appendix A defines the maritime terms used in this section.)

The Port of San Francisco currently ships about 2.7 million metric tons a year. Two thirds of this cargo is general cargo shipped via containers.¹ The remaining one third is breakbulk and liquid and dry bulk cargo (Petroleum, grain).

In the area immediately adjacent to the Mission Bay site are Piers 48, 50 and 54. Pier 48 is used for a bulk paper terminal. Pier 50 is a mixed use facility combining paper storage, industrial assembly and ship repair. The new Caltrans passenger care are being built at Pier 50. Pier 54 is used primarily to support ship repair activities. Direct rail and truck access is provided to this area of the Port to support maritime and industrial activities.

SOURCE: TRUCKING GUIDE TO
THE PORT OF
SAN FRANCISCO

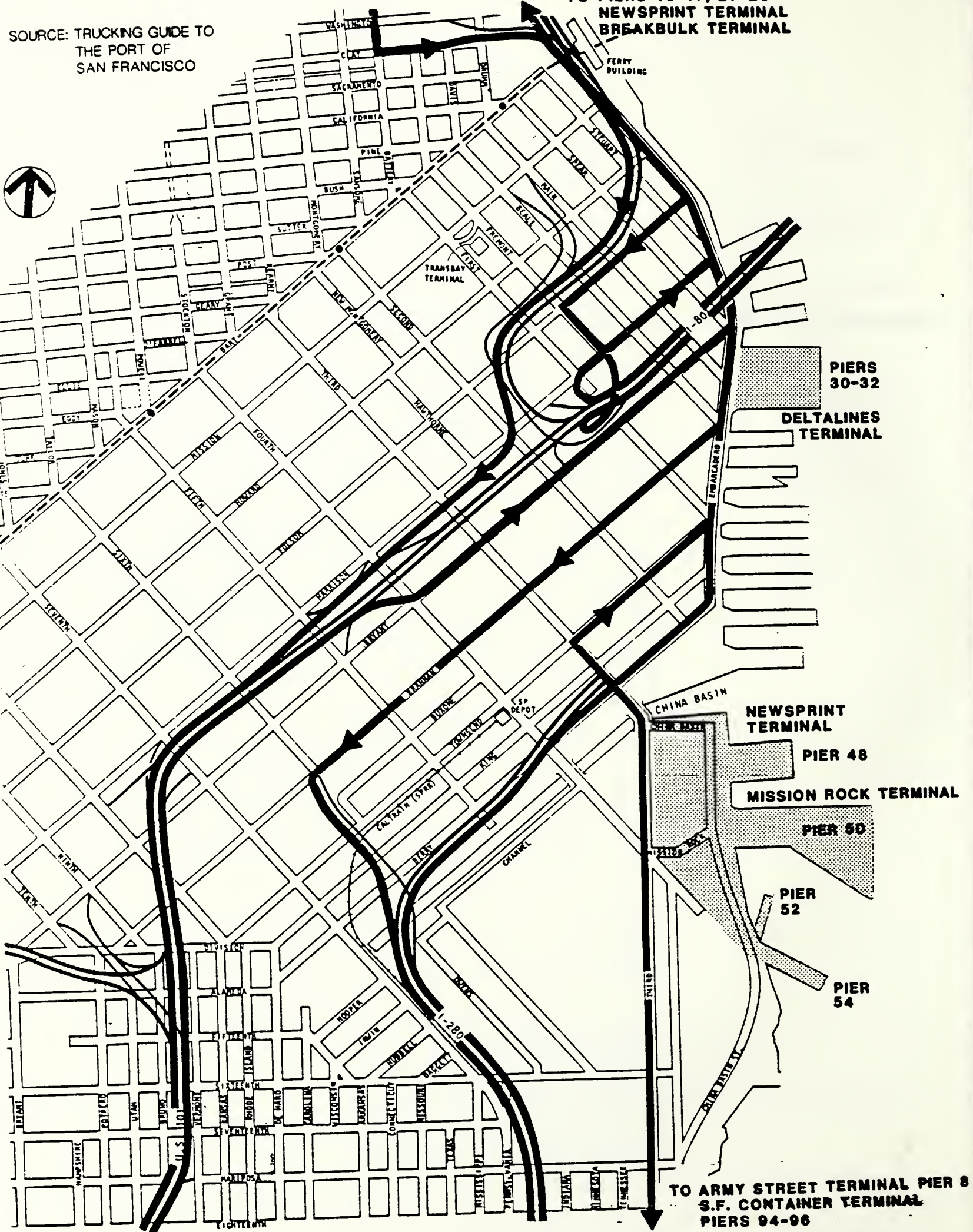


Figure 17

**MARITIME GOODS MOVEMENT FACILITIES AND
RECOMMENDED TRUCK ACCESS ROUTE**

I.0 EXISTING CONDITIONS

The proposed Mission Rock Container Terminal, which would extend from Piers 48 to 54, was proposed to include fire berths with a capacity for roughly 1.8 million short-tons a year. It would generate about 2,000 truck trip ends per weekday. The Port staff is currently exploring an alternative location for this container terminal development between Pier 70 and to the existing terminal at Pier 80.

Pedestrian and Bicyclist Considerations

There are few existing pedestrian or bicycle facilities on the Mission Bay site. Third and Fourth Streets are designated Third Class bikeways (signed bike routes without bike lanes). Most streets in the industrial area do not have sidewalks.

Observations indicate that there is little pedestrian activity in the area, except near the Caltrain station at Fourth and Townsend. At the Caltrain station heavy pedestrian volumes cross Fourth and Townsend Streets to access the Muni bus stops or walking to and from destinations downtown. The heavy volumes and the frequent jaywalking (crossing and mid-block) cause a congestion problem and potentially a safety problem at this location.

I.5.6 Parking Analysis

Survey Methodology—Off-Street Parking

On Monday, March 14, 1983, between 10:45 and 11:45 a.m. and 1:15 and 4:00 p.m. DKS Associates surveyed all 29 of the public off-street parking lots in the Mission Bay area and nearby South of Market. The survey was conducted two days after a severe rain storm hit San Francisco. Several parking lots remained flooded. Eight public parking lots in the Mission Bay area and nearby South of Market were found to be vulnerable to flooding. Parking lot 22 lost fifty percent (50%) of its spaces to flooding. Parking lots under the U.S. 101 freeway appeared to be most vulnerable because of unpaved lots and poor drainage. The effects of the flooding on the survey results were compensated for by comparing the data to the City of San Francisco 1981 South of Market Street Parking

I.0 EXISTING CONDITIONS

Survey, and substituting this data for the flooded lots. This adjustment tends to overstate current parking demand in the area since vehicles which normally park in the flooded lots were likely counted in other lots in the survey. Hence, the substitution of earlier data on the flooded lots tends to produce "double counting." (Note: this will be updated.)

Survey Results

Figure 18 shows the Mission Bay off-street parking study area boundary, the parking lots surveyed, and the parking lot occupancy level.

Significant Findings

Off-Street Parking Occupancy - An estimated 3,033 vehicles were parked at the peak parking period in 3,832 off-street parking spaces on the day of the survey, for an occupancy rate of about 79 percent. The highest occupancy levels are found in the northeastern part of the study area (east of 5th Street and north of Townsend Street) where seven out of nine parking lots had greater than 85 percent occupancy. The parking lots between 5th Street and 7th, north of Townsend Street, have the most available parking.

Office, light industrial, and warehouse uses dominate the northern part of the study area while heavy industrial uses dominate the southern part. Twenty-three of the 29 public pay lots are located north of Townsend Street. The parking lots in this area account for 82 percent of the total occupied spaces. South of Townsend, there is more open undeveloped land and some unauthorized and uncontrolled parking takes place in vacant cleared areas on site. Most of this takes place in the vicinity of and is related to employee parking for industries located in Mission Bay.

Off-Street Parking Rates--The Mission Bay study area off-street parking rates vary from free to \$5.00 per day. The average public off-street parking fee is \$1.81 for the day.

1.0 EXISTING CONDITIONS

Methodology: On-Street Parking Survey

The Mission Bay curb parking survey was conducted on Tuesday, March 22, 1983 between 9:30 and 11:45 a.m. and from 1:15 and 4:00 p.m. and Wednesday, March 23 between 9:30 and 11:45 a.m. The first day there were occasional rain showers. The survey was completed on the second day and the areas which were affected by the rain on the first day were resurveyed. The curb parking in most areas is free so data regarding meter parking was excluded. The seven streets surveyed are listed below:

- o Townsend Street (between Third Street and Seventh Street)
- o King Street (between Third Street and Seventh Street)
- o Channel Street (between Fourth Street and Sixteenth Street)
- o Third Street (between Townsend Street and Sixteenth Street)
- o Fourth Street (between Townsend Street and Third Street)
- o Seventh Street (between Townsend Street and Sixteenth Street)
- o Sixteenth Street (between Seventh Street and Third Street)

Curb Parking Occupancy--A total of 1,700 curb parking spaces were counted in the greater Mission Bay study area and 54 percent of the parking spaces are occupied. Fifty-four percent parking occupancy is deceptive, because the occupancy percentage is 77 percent for the area north of Channel Street and that area accounts for 71 percent of all cars parked in the greater Mission Bay area. The curb parking results are similar to the public off-street, because they are heavily influenced by the same land uses. Office, warehouse, and light industrial uses dominate the area north of Channel Street. A high

1.0 EXISTING CONDITIONS

percentage of cars are parked near the Southern Pacific Transportation Company Depot and the China Basin Building. The high percentage of cars parked on Channel Street near Fourth Street were also generated by the China Basin Building.

Curb space in the heavy industrial area to the south of Channel is below seventy percent occupancy. The high parking occupancy spot along 7th Street between Hooper Street and Irvin Street is generated by a Greyhound maintenance station.

1.5.7 The I-280 Interstate Transfer Concept Program

The I-280 Interstate Transfer Concept Program is a transportation development program which could significantly affect the Mission Bay's transportation setting. Performed under the auspices of the City and County of San Francisco, Caltrans and The Metropolitan Transportation Commission, the program has resulted in the following recommendation for transportation service in the Mission Bay Area:

- o Removal of the unused stub of I-280 back to Sixth Street.
- o Construction of a new boulevard along the existing King Street alignment to connect with the Embarcadero Boulevard.
- o Construction of new ramps from I-280 onto the new boulevard.
- o Extension of Muni Metro service from the Embarcadero Station on Market Street to the Caltrans station at Fourth and Townsend Streets.
- o Operation of the E-Line streetcar from Fourth and Townsend north on the Embarcadero to the Fisherman's Wharf area.

1.0 EXISTING CONDITIONS

These recommendation have been approved by the San Francisco Board of Supervisors although further funding actions are required.

1.6 Utilities Facilities and Systems

This section of the report summarized the major utility systems presently existing within the project boundaries. These utility systems include water, sewer, gas, electricity, municipal rail, telephone, and public safety signals and alarms. Highlights of these systems are presented below. The information is based upon a site investigation conducted by KCA Engineers, completed in 1983.

1.6.1 Water

Low and high pressure transmission and distribution mains are located generally within the rights-of-way of improved streets throughout the project area.

1.6.2 Sewer

The combined sanitary sewer and storm drain system is adjacent to and within the project area. The site contains two parallel storage conduit, one along the southeasterly edge of China Basin Channel, another in Berry Street. There is also a primary series of large diameter conduit leading to and from the terminus at Mission Creek.

1.6.3 Gas

The project area contains an extensive system of low pressure, large diameter gas mains, with concentrations along Third, Seventh, 16th and Mariposa.

1.6.4 Electricity

The project area is served by a combination of overhead and underground electric distribution systems. Substantial facilities are concentrated in Third, Seventh and Pennsylvania Streets. Overhead systems are distributed uniformly throughout the area.

1.0 EXISTING CONDITIONS

1.6.5 Telephone

Underground facilities are located at the perimeter of the site.

1.6.6 Traffic Signals, Fire Alarms, Police Alarms

Traffic signals are concentrated along major thoroughfares in the project area. The police and fire alarm box system is spread uniformly throughout the site.

1.6.7 Cable TV, Western Union

There are no CATV facilities in the project area. Information about Western Union is not available.

1.7 Community Services and Facilities

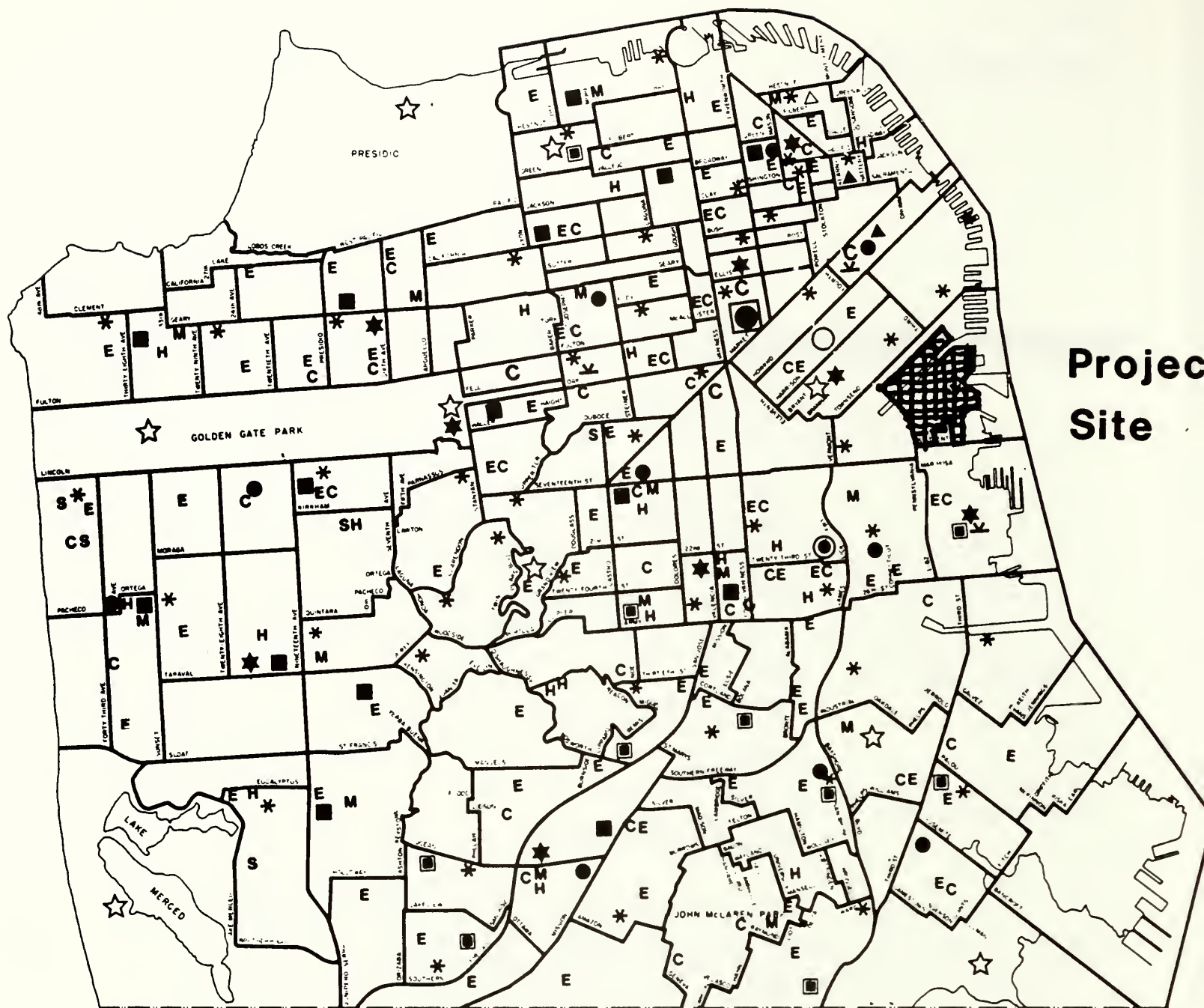
This section of the report addresses existing needs for community services and existing community facilities in the project area.

1.7.1 Existing Needs

There is a very small resident and working population on the site, so the current demand for community services in the project area is not great. Residents of the area include the house boat population, and, according to the Department of Health, a small homeless population camping on vacant land and in vacant buildings. The working population consists of personnel employed in warehousing and distribution for firms with facilities on the site. The crime rate is low. There are few school-aged children. There may be a need for additional health and housing services for the homeless population.

1.7.2 Existing Facilities

Other than utilities, there are no existing community services within the project boundaries. However, there are a number of publicly-owned and operated services in the adjacent neighborhoods of South of Market and Potrero Hill (see Figure 19). In our survey we found 16 such facilities within one mile of the project area. These facilities are listed below.



Project
Site

EXISTING PUBLIC FACILITIES

POLICE FACILITIES

- ★ DISTRICT STATIONS
- ☆ OTHER FACILITIES

HEALTH FACILITIES

- DISTRICT HEALTH CENTER
- ⊙ SAN FRANCISCO GENERAL HOSPITAL
- CITY CLINIC
- ADMINISTRATIVE OFFICES

PUBLIC LIBRARIES

- MAIN LIBRARY
- LARGE BRANCH LIBRARY
- ▣ SMALL BRANCH LIBRARY
- ▲ BUSINESS BRANCH LIBRARY
- △ DEPOSIT STATION

FIRE FACILITIES

- * ACTIVE FACILITIES
- ✕ INACTIVE FACILITIES

SCHOOLS

- C CHILDREN'S CENTERS
- S SPECIAL SCHOOLS
- E ELEMENTARY SCHOOLS
- M MIDDLE SCHOOLS
- H HIGH SCHOOLS
- C CITY COLLEGE

figure 19

1.0 EXISTING CONDITIONS

San Francisco Police Department
Hall of Justice
850 Bryant Street

This is the central police headquarters with city-wide overview. Facilities include investigative bureaus, crime laboratory, police records, detention facilities, police academy, etc.

San Francisco Police Department
Southern District Station
850 Bryant Street

This station includes 1 radio patrol car, no foot patrols, and 105 staff.

San Francisco Police Department
Southeast District Station
2300 Third Street

1 radio patrol car, no foot patrols and 109 staff.

San Francisco General Hospital
1001 Potrero Avenue

This is a teaching hospital for the University of California. Facilities include research, emergency services, outpatient clinics and 30 medical departments.

South of Market Health Center
551 Minna Street

Potrero Hill Health Center
1050 Wisconsin

City Clinic
356 Seventh Street

1.0 EXISTING CONDITIONS

Potrero Branch Library
1616 20th Street

San Francisco Fire Department
Station 8 (Engine 8)
36 Bluxome

San Francisco Fire Department
Station 1 (back up support)
416 Jessie Street

Engine 1, Truck 1.

San Francisco Fire Department
Station 19 (Abandoned)
1300 Fourth Street

San Francisco Unified School District
Daniel Webster Elementary School
465 Missouri Street

Grades K-5, with capacity for 300 students. Enrollment
on January 1982, 391 students.

San Francisco Unified School District
Jean Parker Elementary School
840 Broadway

Grades K-5, with capacity of 450 students. Enrollment
on January 1982, 391 students.

San Francisco Unified School District
Bessie Carmichael Elementary School
55 Sherman Street

Grades K-5, with capacity for 420 students. Enrollment
on January 1982, 413 students.

I.0 EXISTING CONDITIONS

San Francisco Unified School District
Starr King Pre School
1215 Carolina Street

Grades pre K-5, with capacity for 540 students. Present enrollment, 450 students.

San Francisco Unified School District
Potrero Hill Middle School
655 De Haro

Grades 6-8, with capacity for 800 students. Enrollment on January 1982, 624 students.

San Francisco Unified School District
Mission High School
3750 18th Street

Grades 9-12, with capacity for 2,000 students. Current enrollment, 1,888 students.

I.8 Cultural/Historical/Architectural Resources

The following structures and archaeological resources on the site have been identified as having potential historical or cultural significance:

1. Lefty O'Doul Bridge, located at the Third Street crossing of the Mission Creek Channel, built in 1933. This is an iron draw bridge of the trunnion bascule type. The floor of this single leaf bridge is raised by a descending counter balancing weight. Originally named after its designer, Joseph Strauss, the engineer also responsible for the Golden Gate Bridge.

1.0 EXISTING CONDITIONS

2. Peter Maloney Bridge, located at the Fourth Street crossing of the Mission Creek Channel, also a trunion bascule bridge. Available documents show a discrepancy in the age of this bridge, suggesting it may have been built as early as 1916 or as late as 1931. This iron draw bridge is a simpler design than the Third Street bridge. Built by the Joshua Hendy Iron Works.
3. Firehouse, Station 19, 1300 Fourth Street. Constructed in 1928. This two story brick structure was an operating facility until about five years ago. The building is still owned by the Fire Department. Architect and Builder unknown.
4. Basalt block Pavement, King Street between Fourth and Seventh. The "belgian pavement", or cut basalt blocks under contemporary asphalt date back to the 1890's. It was considered more suitable for horse and wagons than riverstone pavement. This pavement can be carefully removed and used in other parts of the development.
5. China Basin Building, 183 Berry Street. Built in 1922 by Architects Bliss and Faville, this structure was remodeled by Robinson Mills in 1973. The Department of City Planning has rated this building as having modest contextual significance.

In addition, there is the potential for significant archaeological resources at the following locations see (Figure 20):

- o The 1850's shipyards located on the south side of Townsend between Third and Fourth Streets.
- o The 1869—mid 1870's shipyards located along the east side of Third Street between Seventeenth and Mariposa Streets.

1.0 EXISTING CONDITIONS

- o The 1880's shipyards located on the south side of Berry Street between Seventh and Sixth Streets.
- o The Pacific Glass Works of 1863—1869 located on Iowa and Mariposa Streets.
- o The San Francisco Glass Works of 1865—1868 located on Townsend Street between Third and Fourth Streets.
- o The San Francisco Glass Works of 1868—1878 located on King Street between Fourth and Fifth Streets.
- o A reported dump or trash pit of early historical material located on Minnesota between Seventeenth and Mariposa Streets.

Further analysis of potential archaeological resources will be part of the Mission Bay Study EIR.

1.9 Regulatory Agency Jurisdictions

Several governmental agencies have jurisdiction over the site. Land use, zoning, building height and bulk, floor area ratios and building setbacks are regulated by the San Francisco Department of City Planning. Other city, regional, state and federal agencies with jurisdiction or review authority for development plans and plan concepts for on this site are listed below. Fuller descriptions of the agency roles follow.

1.0 EXISTING CONDITIONS

Local:

City of San Francisco:

DCP Department of City Planning	EIR, Design, Master Plan Amendment, Zone changes, Development Agreement
BBI Bureau of Building Inspection	Site permit, code compliance, plan checks, building permits
DPW Department of Public Works	Streets, utilities, bridge operations
Real Estate Department	Public land
PUC Public Utilities Commission	Transit routes, utilities
PARK/REC Recreation & Parks Department	Parks and public open space
USD Unified School District	Schools
MOCD Mayor's Office of Community Development	Community facilities, employment
MOHED Mayor's Office of Housing and Economic Development	Housing subsidies, economic development
MOES Mayor's Office of Emergency Services	Emergency response plan
BoS Board of Supervisors	Final approval, all permits

I.0 EXISTING CONDITIONS

Port of San Francisco	Trustee for Port lands, Port Priority Lands, relation to MTC/BCDC Seaport Plan, Mission Rock Container Terminal Master Plan, transportation/circulation across Santa Fe/Southern Pacific lands
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SFFD Fire Department	Fire safety aspects
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SFPD Police Department	Security aspects
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HEALTH Health Department	Health aspects
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ART Arts Commission	Public buildings, public art
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Regional:

RWQCB Regional Water Quality Control Board	Water quality in Channel, discharge permits for runoff from dredged materials
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MTC Metropolitan Transportation Commission	Major thoroughfare changes, I-280 modifications, Seaport Plan
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ABAG Association of Bay Area Governments	Advisory on housing, jobs and industry impacts
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BAAQMD Bay Area Air Quality Management District	Vehicular movements impacts, light industry emissions
--	---

1.0 EXISTING CONDITIONS

**BCDC Bay Conservation
& Development
Commission**

100' Shoreline Band
jurisdiction on China Basin
Channel and any other tidal
waterways that are
developed. Public access to
shoreline. Seaport Plan
protection of designated
waterfront sites

State:

**SLC State Lands
Commission**

Ownerships of underwater
tidal parcels, land titles
between Southern Pacific and
the State

**F&G California Fish &
Game**

Water quality in the Channel
and any extensions of the
channel, recreational fishing
opportunities

**Historic Preservation
Office**

Documentation of potential
historical landmarks, sunken
vessels, other artifacts could
emerge from Mission Bay
excavations

Caltrans

Cal train Station, I-280
Transfer Concept Program

Federal:

**Corps U.S. Army Corps
of Engineers**

Lead agency for EIS and all
other Federal and State
agencies, any modifications to
Channel

I.0 EXISTING CONDITIONS

EPA Environmental Protection Agency	Advisory to above
F&W Fish & Wildlife Service	Water quality in channel and extensions, recreational fishing opportunities
USCG U.S. Coast Guard	Any modifications to two drawbridges, either physical or operational, navigation in channel
NPS National Park Service	Historic structures alterations, (possibly Fourth Street drawbridge)
DOT Department of Transportation	I-280 Transfer Concept Program

I.0 EXISTING CONDITIONS

U.S. Army Corps of Engineers, San Francisco District

Scope of Authority

Portions of the proposed Mission Bay project appear to be within the jurisdiction and permitting authority of the U.S. Army Corps of Engineers. Specifically, the Corps' jurisdiction includes the following:

1. All proposed work and/or structures extending bayward or seaward of the line on shore reached by the mean of the high water (MHW) in navigable waters of the United States, including all new work in unfilled portions of the interior of diked areas below former MHW; and
2. All proposed discharges of dredged or fill material into water of the United States including navigable coastal and inland waters.

Aspects of the project which would fall within the Corps' jurisdiction include the following:

- a. Any alteration to China Basin (breaching);
- b. Any lagoon/canal system that is subject to tidal flushing;
- c. Boat marinas, piers and other structures;
- d. Bulkhead and water edge treatment;
- e. Any dredging of existing fill;
- f. On-site disposal of excavated material; and
- g. Imported fill material.

I.0 EXISTING CONDITIONS

Planning/Permitting Requirements

The Corps does not maintain land use planning documents. Their involvement in land use planning is governed strictly by the Federal Regulations relating to Corps activities. All proposed work and/or placement of structures within the proposed channels require a Section 10 permit from the Corps under Section 10 of the Rivers and Harbors Act of March 1899 (33 U.S.C. 403). All discharges or importation of fill material require a Section 404 permit from the Corps under Section 404 of the Clean Water Act (CWA) (3 U.S.C. 1344).

Application for Corps authorization should include detailed plans showing the location, extent and character of the proposed work and/or structures. Once the completed application is received, the Corps will advertise the proposed work by the issuance of a public notice for a period of 30 days.

The major objectives of the Corps relate to maintaining water quality, safe navigation, protection of water edges and flood protection. Design of the waterways should take into consideration the Corps' concerns in these areas.

U.S. Coast Guard, 12th District

Scope of Authority

The U.S. Coast Guard has permitting jurisdiction over all bridges over navigable waters of the United States. Specifically, if the Mission Bay project calls for modification, alteration, or removal of the 4th Street or 3rd Street drawbridge or the addition of a new bridge, a Coast Guard permit would be required. Removal of the bridges would also require an Act of Congress.

I.0 EXISTING CONDITIONS

In addition, the Coast Guard has the authority to require additional safety measures within navigable waterways. For example, they may require navigation lights or channel markers for water safety. The Coast Guard does not directly issue a permit for waterway safety. They instead act as a consultant to the Corps and comment on the Corps' public notice.

Planning/Permitting Requirements

While the Coast Guard does not maintain long-range plans, they do have manuals which specify requirements for waterway safety; the "Light Manual", and bridge construction; "Bridges over Navigable Waters" and the "Bridge Permit Application Guide."

Since the waterways proposal as it now stands does not add, alter or destroy any bridges to any navigable waterways, the Coast Guard has no direct permitting jurisdiction over the waterway construction. However, indirectly they still influence design safety features such as signing and lighting.

Should any modifications to the bridges become part of the project, a Coast Guard permit would be required. Currently both bridges are operated by the City Bureau of Engineering. Clearance is eight feet at mean high water. A non-bascule bridge replacement would probably require a clearance of 70 feet above mean high water.

A Coast Guard permit, if required, would be processed concurrently with the Corps of Engineers permit, but it is still a separate permit. Any Coast Guard permit first requires approval from BCDC, RWQCB and the State Board of Harbor Commissioners.

I.0 EXISTING CONDITIONS

The overall objective of the Coast Guard is to provide for safe navigation within navigable channels. Design elements of the project including physical or operational changes to the drawbridges should incorporate Coast Guard lighting, signing and other specifications. For example, if either drawbridge was replaced with a new non-bascule bridge, clearance would probably need to be a minimum of 70 feet, while a new bascule bridge would probably require ten feet of clearance.

Regional Water Quality Control Board (RWQCB)

Scope of Authority

The Regional Water Quality Control Board has authority over any activity related to the project which has the potential to adversely affect water quality. The Board exercises their authority by commenting on the EIR, commenting on the Army Corps permit and certifying that water quality will be maintained at the standards, and issuing waste discharge and/or NPDES (National Pollutant Discharge Elimination) permits.

For example, if the project resulted in any of the following, the RWQCB would either require a permit or request that measures be taken to ameliorate adverse impacts:

- o Discharge dredging materials on the land such that runoff could affect water quality. (Waste discharge permit).
- o Construction or operation of the canals in a manner which causes groundwater to be infiltrated by salt water. (Request for mitigation measures to eliminate impact).
- o Addition of an outfall which constitutes a point source for continuous runoff into waterway. (NPDES permit).

1.0 EXISTING CONDITIONS

The major objective of the RWQCB is to maintain water quality in the bay and newly created waters as well as groundwater quality.

California Department of Health Services (DOHS)

The Department of Health Services does not have any permitting authority over the project. However, DOHS may comment on the EIR and suggest measures to eliminate vector problems if they are likely. In addition, DOHS would act in an advisory role to the RWQCB if toxic material was discovered during dredging of the waterways. Issues of concern to DOHS are limited to vectors and toxic materials.

Bay Area Air Quality Management District (BAAQMD)

Scope of Authority

It is unlikely that the Bay Area Air Quality Management District will be involved in the Mission Bay project as a permitting agency unless and until specific light industrial, research and development or other uses are proposed which cause air pollution (e.g., contain sources of combustion or use chemicals and solvents, or otherwise generate emissions). However, the BAAQMD may comment on the EIR and suggest additional mitigation measures to be incorporated into the project.

The major objective of the Bay Area Air Quality Management District is to attain specified air quality standards as stated in the Air Quality Management Plan. The project may be evaluated by the BAAQMD as to how it contributes to the overall attainment of air quality standards.

Specific concerns in San Francisco are that traffic generated by the project not exceed carbon monoxide standards, and that intersections be designed to minimize congestion. In addition, during the construction period conventional methods should be used to minimize the generation of particulates.

I.0 EXISTING CONDITIONS

California Fish and Game (F&G) and Fish and Wildlife Service (F&W)

Neither Fish and Game nor Fish and Wildlife have permitting authority over the project. They do not anticipate any significant effects on fish and wildlife as a result of the project, however, both agencies may comment on the EIR. Issues which may be of interest to both agencies include water quality, addition of fishing opportunities, impacts upon fish and wildlife and the discovery of endangered species.

Association of Bay Area Governments (ABAG)

Scope of Authority

The Association of Bay Area Governments is not a regulatory agency and therefore has no permit jurisdiction over the project. However, ABAG may comment on the EIR and recommend mitigation measures.

ABAG's principal interest in the project will be in the areas of housing, transportation and jobs. ABAG has no stated objectives for projects, however in general, ABAG supports housing in balance with jobs, affordable housing, adequate transportation and other services.

Environmental Protection Agency

The Environmental Protection Agency has no permitting jurisdiction over the project. The EPA is likely only to become involved in an advisory capacity to the Army Corps and possibly comment on the EIR.

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I.0 EXISTING CONDITIONS

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Prevailing Principles and Objectives

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

2.1 Introduction

The City's Master Plan, and other local, state and regional plans all contain principles and objectives for land development some of which apply to the Mission Bay site. Also, site-specific plans have been prepared for this site by Santa Fe Pacific Realty Corporation and several community groups, and these plans include statements of principles and objectives. This section gathers all those principles and objectives together to document the extent of the prevailing guidance for site development. From this long list, a shorter list will be created that contains the principles and objectives to be used specifically to guide Mission Bay site development. Along with the land use program and design guidelines, they will provide the direction for developing alternative plans for the site.

For purposes of this document, principles are defined as those grander ideas or goals which suggest the desired character of development. Objectives are more specific statements that better define how, when, where, what kind, how much and for whom development should occur. City documents also contain "policies" which shall be considered along with objectives. This list is organized by plan.

2.2 City Master Plan—Objectives and Policies

2.2.1 Environmental Protection Element (1973)

Conservation Plan

General

- | | |
|-------------|--|
| Objective 1 | Achieve a Proper Balance Among the Conservation, Utilization and Development of San Francisco's Natural Resources. |
| Policy 1 | Conserve and protect the natural resources of San Francisco. |
| Policy 3 | Restore and replenish the supply of natural resources. |

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

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- | | |
|---|--|
| Policy 4 | Assure that all new development meets strict environmental quality standards and recognizes human needs. |
| Objective 2 | Implement Broad and Effective Management of Natural Resources. |
| Policy 2 | Promote citizen action as a means of voluntarily conserving natural resources and improving environmental quality |
| Bay, Ocean and Shorelines
Objective: | Maintain and Improve the Quality of the Bay, Ocean and Shoreline Areas. |
| Policy 1 | Cooperate with and otherwise support regulatory programs of existing regional, State and Federal agencies dealing with the Bay, Ocean, and Shorelines. |
| Policy 2 | Promote the use and development of shoreline areas consistent with the Comprehensive Plan and the best interest of San Francisco. |
| Policy 3 | Implement plans to improve sewage treatment and halt pollution of the Bay and Ocean. |
| Policy 4 | Encourage and assist privately operated programs to conserve the resources of the Bay, Ocean and Shorelines. |
| Fresh Water
Objective 1 | Assure a Permanent and Adequate Supply of Fresh Water to Meet the Present and Future Needs of San Francisco. |

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 1 Maintain an adequate water distribution system within San Francisco.

Policy 2 Exercise controls over development to correspond to the capabilities of the water supply and distribution system.

Policy 5 Improve and extend the auxiliary water supply system of the Fire Department for more effective fire fighting.

Land
Objective: Assure that the Land Resources in San Francisco are Used in Ways that Both Respect and Preserve the Natural Values of the Land and Serve the Best Interests of all the City's Citizens.

Policy 1 Preserve and add to public open space in accordance with the objectives and policies of the Recreation and Open Space Plan.

Flora and Fauna
Objective: Ensure the Protection of Plant and Animal Life in the City.

Policy 2 Protect the habitats of known plant and animal species that require a relatively natural environment.

Transportation Noise Plan
Objective 1 Reduce Transportation--Related Noise.

Policy 5 Retain and Expand the electric trolley network.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

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- Policy 6 Discourage changes in streets which will result in greater traffic noise in noise-sensitive areas.
 - Objective 2 Minimize the Impact of Noise on Affected Areas.
 - Policy 1 Promote site planning, building orientation and design, and interior layout that will lessen noise intrusion.
 - Policy 2 Promote the incorporation of noise insulation materials in new construction.
 - Policy 3 Construct physical barriers to reduce noise transmission from heavy traffic carriers.
 - Objective 3 Promote Land Uses that are Compatible with Various Transportation Noise Levels.
 - Policy 1 Discourage new uses in areas in which the noise level exceeds the noise compatibility guidelines for that use.
 - Policy 3 Locate new noise-generating development so that the noise impact is reduced.

2.2.2 Urban Design Element (1971)

Policies for City Pattern

Image and Character

- Objective 1 Emphasis of the Characteristic Pattern Which Gives to the City and its Neighborhoods an Image, a Sense of Purpose, and a Means of Orientation.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- Policy 1 Recognize and protect major views in the city, with particular attention to those of open space and water.
- Policy 2 Recognize, protect and reinforce the existing street pattern, especially as it is related to topography.
- Policy 3 Recognize that buildings, when seen together, produce a total effect that characterizes the City and its districts.
- Policy 4 Protect and promote large-scale landscaping and open space that define districts and topography.

Organization and Sense of Purpose

- Policy 5 Emphasize the special nature of each district through distinctive landscaping and other features.
- Policy 6 Make centers of activity more prominent through design of street features and by other means.
- Policy 7 Recognize the natural boundaries of districts, and promote connections between districts.
- Policy 8 Increase the visibility of major destination areas and other points for orientation.
- Policy 9 Increase the clarity of routes for travelers.
- Policy 10 Indicate the purposes of streets by means of a citywide plan for street landscaping.
- Policy 11 Indicate the purposes of streets by means of a citywide plan for street lighting.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Objective 2	Conservation of Resources which Provide a Sense of Nature, Continuity with the Past, and Freedom from Overcrowding.
Policy 1	Preserve in their natural state the few remaining areas that have not been developed by man.
Policy 2	Limit improvements in other open spaces having an established sense of nature to those that are necessary, and unlikely to detract from the primary values of the open space.
Natural Areas	
Policy 3	Avoid encroachments on San Francisco Bay that would be inconsistent with the Bay Plan or the needs of the City's residents.
Richness of Past Development	
Policy 4	Preserve notable landmarks and areas of historic, architectural or aesthetic value and promote the preservation of other buildings and features that provide continuity with past development.
Policy 6	Respect the character of older development nearby in the design of new buildings.
Policy 8	Maintain a strong presumption against the giving up of street areas for private ownership or use, or for construction of public buildings.
Street Space	
Policy 9	Review proposals for the giving up of street areas in terms of all the public values that streets afford.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 10 Permit release of street areas, where such release is warranted, only in the least extensive and least permanent manner appropriate to each case.

Objective 3 Moderation of Major New Development to Complement the City Pattern, the Resources to be Conserved, and the Neighborhood Environment.

Policies for Major New Development

Visual Harmony

Policy 1 Promote harmony in the visual relationships and transitions between new and older buildings.

Policy 2 Avoid extreme contrasts in color, shape and other characteristics which will cause new buildings to stand out in excess of their public importance.

Policy 3 Promote efforts to achieve high quality of design for buildings to be constructed at prominent locations.

Height and Bulk

Policy 4 Promote building forms that will respect and improve the integrity of open spaces and other public areas.

Policy 5 Relate the height of buildings to important attributes of the City pattern and to the height and character of existing development.

Policy 6 Relate the bulk of buildings to the prevailing scale of development to avoid an overwhelming or dominating appearance in new construction.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Mission Bay is shown with three Height variations, ranging from the height of the I-280 Freeway, alongside the Freeway, increasing to 89-160 feet moving easterly, to a high of 161-240 feet near the triangle of 3rd, 4th, and Channel Streets. Mission Bay is shown with three Bulk variations, ranging from a 250-foot length (above 40 feet) alongside the Freeway to a 110-foot length (above either 40 or 80 feet) moving easterly.

Large Land Areas

- Policy 7 Recognize the special urban design problems posed in development of large properties.
- Policy 8 Discourage accumulation and development of large properties, unless such development is carefully designed with respect to its impact upon the surrounding area and upon the city.
- Policy 9 Encourage a continuing awareness of the long-term effects of growth upon the physical form of the city.
- Policy 10 Parking garages lack visual interest if they have extensive rows of doors, blank walls or exposed vehicles. Extensive curb cuts prevent planting and other enhancements of the street, eliminate curb side parking and are potentially dangerous to pedestrians.
- Policy 11 Fast and heavy traffic on residential streets makes them unattractive for pedestrian activities, and generates irritating dirt and noise.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- Objective 4 Improvement of the Neighborhood Environment to Increase Personal Safety, Comfort, Pride and Opportunity.
- Policy 6 Wide, generous sidewalk areas provide opportunities for outdoor recreation and pedestrian amenities.
- Policy 7 Interesting details in the design of street furniture, paving and other features in pedestrian areas can increase the amenity and character of streets.
- Policy 8 Wide streets can be narrowed at the intersection and landscaped to provide sitting areas and visual amenity.
- Policy 9 Open, unlandscaped parking areas are dull and unattractive, and generally have a deleterious effect upon their surroundings.

Policies for Neighborhood Environment

Health and Safety

- Policy 1 Protect residential areas from the noise pollution and physical danger of excessive traffic.
- Policy 2 Provide buffering for residential properties when heavy traffic cannot be avoided.
- Policy 4 Design walkways and parking facilities to minimize danger to pedestrians.

Feeling of Neighborhood

- Policy 5 Provide adequate maintenance for public areas.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 6 Emphasize the importance of local centers providing commercial and government services.

Policy 7 Encourage and assist in voluntary programs for neighborhood improvement.

Opportunity for Recreation

Policy 8 Provide convenient access to a variety of recreation opportunities.

Policy 9 Maximize the use of recreation areas for recreation purposes.

Policy 10 Encourage or require the provisions of recreation space in private development.

Policy 11 Make use of street space and other unused public areas for recreation.

Visual Amenity

Policy 12 Install, promote and maintain landscaping in public and private areas.

Policy 13 Improve pedestrian areas by providing human scale and interest.

Policy 14 Remove and obscure distracting and cluttering elements.

2.2.3 Commerce and Industry Element (1975)

Citywide Objectives

Objective 1 Manage Economic Growth and Change to Ensure Enhancement of the Total City Living and Working Environment.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 1 Encourage development which provides substantial net benefits and minimizes undesirable consequences. Discourage development which has substantial undesirable consequences that cannot be mitigated.

Policy 2 Assure that all commercial and industrial uses meet minimum reasonable performance standards.

Business Vitality Objective 2

Maintain and Enhance a Sound and Diverse Economic Base and Fiscal Structure for the City.

Policy 1 Seek to retain existing commercial and industrial activity and to attract new such activity to the city.

Policy 3 Seek revenue measures which will spread the cost burden equitably to all users of City services.

Employment Objective 3

Provide Expanded Employment Opportunities for City Residents, Particularly the Unemployed and Economically Disadvantaged.

Policy 1 Promote the attraction, retention and expansion of commercial and industrial firms which provide employment improvement opportunities for unskilled and semi-skilled workers.

Policy 2 Promote measures designed to increase the number of San Francisco jobs held by San Francisco residents.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- | | |
|-------------------------|---|
| Policy 3 | Emphasize job training and retraining programs that will impart skills necessary for participation in the San Francisco labor market. |
| Policy 4 | Assist newly emerging economic activities. |
| Industry
Objective 4 | Improve the Viability of Existing Industry in the City and the Attractiveness of the City as a Location for New Industry. |
| Policy 1 | Maintain and enhance a favorable business climate in the City. |
| Policy 2 | Promote and attract those economic activities with potential benefit to the City. |
| Policy 5 | Avoid encroachment of incompatible land uses on viable industrial activity. |
| Policy 6 | Assist in the provision of available land for site expansion. |
| Policy 8 | Provide for the adequate security of employees and property. |
| Policy 10 | Enhance the working environment within industrial areas. |
| Policy 11 | Maintain an adequate supply of space appropriate to the needs of incubator industries. |

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Maritime Objective 5	Realize San Francisco's Full Maritime Potential.
Policy 1	Develop and implement a comprehensive long-range maritime development program for the Port.
Policy 2	Focus investment on those port features in which San Francisco has a natural advantage. Create competitive advantages by providing more cost efficient freight handling facilities.
Policy 4	Avoid actions which may serve to displace desired existing maritime uses.
Policy 5	Assure adequate funding for capital investments as well as operational expenses of the Port.
Policy 8	Encourage maritime activity which complements visitor activity and resident recreation.
Policy 11	Pursue permitted non-maritime development on Port properties.
Downtown Office Objective 6	Maintain and Improve San Francisco's Position as a Prime Location for Financial, Administrative, Corporate, and Professional Activity.
Policy 2	Guide location of office development to maintain a compact downtown core so as to minimize displacement of other viable uses.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Neighborhood Commercial

Objective 8 Maintain and Strengthen Viable Neighborhood Commercial Districts Readily Accessible to City Residents.

Policy 1 Promote the multiple use of neighborhood commercial areas with priority given to neighborhood-serving retail and service activity.

Policy 3 Protect environmental quality in neighborhood commercial areas.

Policy 5 Encourage community-based economic development.

Government, Health and Education Service

Objective 9 Enhance San Francisco's Position as a National and Regional Center for Governmental, Health, and Educational Services.

Policy 2 Encourage the extension of needed health and educational services, but manage expansion to avoid or minimize disruption of adjacent residential areas.

Policy 3 Promote the provision of adequate health and educational services to all geographical districts and cultural groups in the City.

Visitor Trade

Objective 10 Enhance San Francisco's Position as a National Center for Conventions and Visitor Trade.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

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- Policy 1 Guide the location of additional tourist related activities to minimize their adverse impacts on existing residential, commercial, and industrial activities.
 - Policy 2 Support locally initiated efforts to improve the visitor trade appeal of neighborhood commercial districts.

2.2.4 Residential Element (1984)

Supply of New Housing

- Objective 1 To Provide New Housing for All Income Groups in Appropriate Locations.

- Policy 1 Encourage development of housing on surplus, underused and vacant public lands.
- Policy 2 Facilitate the conversion of underused industrial and commercial areas to residential use.
- Policy 6 Discourage development of new housing in areas unsuitable for residential occupancy, or on sites containing existing housing worthy of retention.

Housing Density

- Objective 2 To Increase Substantially the Supply of Housing without Overcrowding or Adversely Affecting the Prevailing Character of Existing Neighborhoods.

- Policy 3 In appropriate cases, consider the size of the unit in establishing allowable densities.
- Policy 4 Adopt specific zoning districts which conform to a generalized residential land use plan.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Affordability of Housing

Objective 5 To Provide Housing Affordable by All Income Groups, Particularly Low and Moderate Income Households.

Policy 1 Use the City's financial powers and resources to reduce the cost and increase the supply of low and moderate income housing.

Policy 2 Make maximum use of available federal and state housing subsidy programs

Policy 3 Seek inclusion of low and moderate income units in new housing development.

Policy 6 Allow construction of a variety of innovative housing types that reduce cost.

Policy 7 Encourage non-profit and limited equity ownership of housing.

Policy 8 Ensure that office developments and higher educational institutions assist in meeting the housing demand they generate.

Policy 9 Streamline the permit and environmental review processes to expedite housing construction.

Policy 10 Ensure that the City's codes and development requirements do not unnecessarily increase the cost of housing.

Neighborhood Environment

Objective 6 To Provide a Quality Living Environment.

Policy 1 Assure housing is provided with adequate public improvements, services and amenities.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 2	Allow appropriate neighborhood-serving commercial activities in residential areas
Policy 4	Promote development of well-designed housing.
Accessibility Objective 7	To Provide Maximum Housing Choice.
Policy 1	Prevent housing discrimination based on age, race, religion, sex, sexual preference, marital status, ancestry, national origin, color or disability.
Policy 2	Promote adaptability and maximum accessibility of residential dwellings for disabled occupants.
Policy 3	Promote the availability of units suitable for groups with special housing needs including large families, the elderly, and those needing group housing and emergency shelter.
Policy 4	Eliminate discrimination against households with children.
Policy 5	Encourage economic integration in housing.
Policy 6	Provide adequate rental housing opportunities.
Policy 7	Expand opportunities for home ownership.
Policy 10	Promote the availability of units suitable for persons with varied lifestyles.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Displacement Objective 8

To Avoid or Mitigate Hardships Imposed by Displacement.

- Policy 1 Minimize relocation hardship and displacement caused by the demolition or conversion of housing.
- Policy 2 Permit displaced households the right of first refusal to occupy any replacement housing units.
- Policy 3 Provide relocation services where publicly funded actions cause displacement.

2.2.4.1 Office Affordable Housing Production Program (OAHP) (1985)

The City's recently-passed OAHP legislation establishes a formula for computing the amount of housing which must be built whenever new office space in excess of 50,000 square feet is built, establishes requirements with respect to the phasing of housing in coordination with the construction of office buildings, establishes that 62 percent of the units which must be built must be affordable to low and moderate-income people, and requires that the low/moderate housing remain available to those income groups for 20 years.

If the maximum square footages of R&D and Office space are built as contained in the Mayor's letter, OAHP would require that a total of 2,596 units be built and that 1,610 of those be affordable to low and moderate income people. The 7,577 units called for in the Mayor's letter far exceed the 2,596 requirement, and the 2,273 affordable units to be provided according to the Mayor's letter exceed the 1,610 requirement.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

The definition of affordable as contained in the Mayor's letter, however, does not appear to comply with the definition as contained in the OAHPP legislation. Given several assumptions, it appears that it would be necessary to provide housing at \$124,000 or below in order to meet the affordability requirements of the OAHPP legislation. This might suggest that the 1,600 units required by OAHPP be at the lower end of the range of \$105,000 to \$150,000 provided in the Mayor's letter. The phrasing provided in the Mayor's letter seems not be consistent with the OAHPP legislation. The letter does not speak to the issue of how long the affordable housing should remain affordable.

2.2.5 Transportation Element (1983)

General Objectives

- Objective 1 Meet needs of all residents and visitors for safe, convenient and inexpensive travel within San Francisco and between City and other parts of region.
 - Policy 2 Give first priority to public transit as the means of meeting San Francisco transportation needs, particularly those of commuters.
 - Policy 3 Coordinate regional and local transportation systems and provide for interline transit transfer.
- Objective 2 Use the Transportation System as a Means for Guiding Development and Improving the Environment.
 - Policy 5 Organize the transportation system to reinforce community identity, improve linkages among interrelated activities and provide focus for community activities.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Mass Transit Plan

Objective 1 Give First Priority to Improving Transit Service.

Transit preferential streets in Mission Bay area are designated as: Third Street, Fourth Street, Townsend Street (2nd to 4th), King Street (Embarcadero to 5th).

Objective 2 Develop Transit as the Primary Mode of Transit to and from Downtown.

(Downtown Plan Objective and Policies replace and update all the policies under this objective).

Rapid Transit Plan--Rail transit on exclusive right-of-way in Mission Bay area is shown on Third Street and King Street (Caltrain to Embarcadero).

Vehicle Circulation Plan

Objective 1 Establish a Thoroughfare System in which the Function and Design of each Street are Consistent with the Character and Use of Adjacent Land.

Policy 1 Divert auto and truck traffic from residential neighborhoods onto major and secondary thoroughfares, and limit major thoroughfare to non-residential streets.

Policy 2 Design streets for a level of traffic that will not cause a detrimental impact on adjacent land uses.

Policy 3 Do not increase vehicular capacity of bridges and highway entering the City.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

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| Policy 4 | Discourage non-recreational travel and non-local travel in and around parks and along shoreline recreation areas. |
| Objective 2 | Provide for Convenient and Safe Movement Among Districts in the City During Normal Travel Periods. |
| Policy 1 | Eliminate unnecessary cross traffic conflicts and improve traffic flow along major thoroughfares. |
| | Vehicle Circulation Plan--Major thoroughfares in the Mission Bay area are designated as Third Street, Fourth Street, and King Street. Sixteenth Street is identified as a secondary thoroughfare. |
| Pedestrian Circulation Plan
Objective | Provide Safe and Pleasant Space for Pedestrians. |
| Policy 1 | Widen sidewalks where intensive commercial, recreational, or institutional activity is present or where residential densities are high. |
| Policy 2 | Retain streets not required for traffic for pedestrian circulation, open space use, and density controls. |
| Policy 3 | Ensure convenient and safe pedestrian crossings. |
| Policy 4 | Partially or wholly close certain streets not required as traffic carriers for pedestrian use or open space. |

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Bicycle Plan Objective 1

Provide for the Safe and Convenient Use of the Bicycle as a Means of Transportation and Recreation.

- Policy 1 Increase the availability of information for commute cycling.
- Policy 2 Expand and improve bikeways in accordance with State standards, incorporating the series of natural passes between hills that are essential to bike travel.
- Policy 3 Eliminate hazards on designated bikeways and on commute streets.
- Policy 4 Accommodate bicycles on regional transit facilities and important regional transportation hubs.

Objective 2

Provide Secure and Convenient Parking Facilities for Bicycles.

- Policy 1 Include facilities for bicycle users in governmental, commercial and residential developments.
- Policy 2 Provide adequate and secure bicycle parking at transit terminals.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 3 Emphasize security in bicycle parking design.

Signed bikeways (Class III) in the Mission Bay area are designated on Third and Fourth Streets south of Townsend and on Townsend east from Fourth to the Embarcadero.

There are no Class I or II bikeways designated in the Mission Bay area. Preferred commute bike routes are shown on 2nd, 3rd and Berry Streets.

Downtown Plan--Transportation Element (1985)

Objective 1 Develop Transit on the Primary Mode of Travel to and from Downtown.

Policy 1 Build and maintain rapid transit from downtown to all suburban corridors and major centers of activity in San Francisco.

Extend MUNI Metro to 4th and Townsend--
Further extend to Showplace Square and
Portrero Hill area.

Policy 2 Expand existing non-rail transit to downtown.

Policy 3 Establish exclusive transit lanes on bridges, freeways and city streets where significant transit service exists.

Policy 4 Coordinate regional and local transportation system and provide for interline transit transfers.

Objective 2 Ensure the Number of auto trips to and from downtown will not be detrimental to the growth or amenity of downtown.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

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- Policy 1 Do not increase (and where possible decrease) the existing automobile capacity of the bridges and highways entering the City.

Remove stub end of I-280 to 6th Street and replace by surface street connected to reconstructed Embarcadero Roadway.
 - Policy 3 Discourage new long-term commuter parking spaces in and around downtown.
 - Policy 4 Locate any new long-term parking structures in areas peripheral to downtown.
 - Objective 3 Provide for Safe and Convenient Bicycle Use as a Means of Transportation.
 - Policy 1 Include facilities for bicycles in governmental, commercial and residential developments.
 - Policy 2 Accommodate bicycle on regional transit facilities and links.
 - Policy 3 Provide adequate and secure bicycle parking facilities at transit terminals.

2.2.6 Recreation and Open Space Element (1985)

The San Francisco Shoreline

- Objective: Maintain an Unbroken Stretch of Public Open Spae from Fort Funston through Aquatic Park. Retain the Natural Character of Open space Areas from Fort Funston to the Eastern Edge of the Presidio. Develop Open Spaces and Recreation Facilities which Complement the Urban Character of the Northern Waterfront and Bay Shoreline.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 1 Require all new development within the shoreline zone to conform with shoreline land use provisions, to incorporate open space, to improve access to the water, and to meet urban design policies.

Policy 3 Provide new public parks and recreation facilities along the shoreline.

Citywide System

Objective: Develop a Diversified and Balanced System of Citywide Recreation and Open Space.

Policy 1 Preserve public open space.

Policy 2 Acquire additional citywide open space for public use.

Policy 3 Gradually eliminate nonrecreational uses in parks and playgrounds and reduce automobile traffic in and around public open spaces.

Neighborhoods

Objective: Provide Opportunities for Recreation and the Enjoyment of Open Space in Every San Francisco Neighborhood.

Policy 1 Acquire new park and recreation space to serve San Francisco's residential neighborhoods.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Eastern Shoreline Plan China Basin Channel

Provide approximately nine acres of new recreation areas for the public along the channel shoreline. The recreation areas should be clearly marked and conveniently accessible to the public. Channel waterfront development should increase the opportunities for public access to the water's edge with a maximum interface of land and water.

In the future the area south of the channel may be converted to a large, multiple-use development. Should this happen, the channel should play a major role in the new development and a new plan for the channel as a recreation asset should be undertaken. Shoreline designated for open space should be stabilized with bank reconstruction, running piers or quays. In the interim the channel area's special amenities should be preserved and priority given to incremental development that will be compatible with long-range objective for the shoreline.

Mission Rock, Public Boat Ramp

Permit maximum recreational use of existing public boat ramp in conjunction with Port activity.

If future Port development necessitates, replace recreation site with equivalent elsewhere on eastern shoreline.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Central Basin

Develop a major, twelve-acre public waterfront park on the Bay shoreline generally between Sixteenth and Eighteenth Streets.

Priority should go to development of large waterside areas for beach, park and picnic facilities with continuous, safe public access. A public marina for small boats, fishing facilities and a landing for a recreational ferry should be provided as needed in the future.

2.2.7 Community Facilities Element

Police Facilities (1974)

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| Objective 1 | Distribute, Locate and Design Police Facilities in a Manner that will Enhance the Effective, Efficient and Responsive Performance of Police Functions. |
| Policy 2 | Provide the number of district stations that balance service effectiveness with community desires for neighborhood police facilities. |
| Policy 3 | Enhance closer police/community interaction through the decentralization of police services that need not be centralized. |
| Policy 4 | Distribute, locate, and design police support facilities so as to maximize their effectiveness, use and accessibility for police personnel. |

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

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- Policy 6 Design facilities to allow for flexibility, future expansion, full operation in the event of a seismic emergency, and security and safety for personnel, while still maintaining an inviting appearance that is in scale with neighborhood development.
 - Policy 7 Combine police facilities with other public uses whenever multi-use facilities support planning goals, fulfill neighborhood needs, and meet police service needs.
 - Objective 2 Locate and Design Facilities in a Manner that Encourages Constructive Police/Neighborhood Interaction.
 - Policy 1 Provide expanded police/community relations and police services through outreach programs, primarily utilizing existing facilities.
 - Policy 2 Establish police district boundaries along natural neighborhood edges, and reinforce neighborhood identity by locating district stations near the centers of their service areas.
 - Policy 3 Design police facilities to maximize opportunities for promoting community/police relations through dual use of facilities.
 - Neighborhood Center Facilities
 - Objective 1 Assure that Neighborhood Residents have Access to Needed Services and a Focus for Neighborhood Activities.
 - Policy 1 Provide neighborhood centers in areas lacking adequate community facilities.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- Policy 3 Develop centers to serve an identifiable neighborhood.
- Policy 4 Locate neighborhood centers so they are easily accessible and near the natural center of activity.
- Policy 5 Develop neighborhood centers that are multi-purpose in character, attractive in design, secure and comfortable, and inherently flexible in meeting the current and changing needs of the neighborhood served.
- Policy 6 Base priority for the development of neighborhood centers on relative need.
- Policy 7 Program the centers to fill gaps in needed services, and provide adequate facilities for ill-housed existing services.
- Policy 8 Provide neighborhood centers with a network of links to other neighborhood and citywide services.
- Objective 2 Provide Neighborhood Centers that are Responsive to the Community Served.
- Policy 2 Provide an effective and responsible management structure for each neighborhood center.

2.2.8 Community Safety Element (1974)

Life Safety

- Objective 1 Reduce Hazards to Life Safety, Minimize Property Damage and Economic Dislocations Resulting from Future Earthquakes.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- Policy 1 Apply a minimum level of acceptable risk to structures and uses of land based upon the nature of use, importance of the use to public safety and welfare, and density of occupancy.
- Policy 4 Require geologic or soil engineering site investigations, and compensating structural design based on findings, for all structures in special geologic study areas.
- Policy 5 Modify permitted land uses and types of structures, where appropriate, according to geologic factors and consistent with the levels of acceptable risk.

2.2.9 Energy Element (1982)

Residential

- Objective 1 Enhance the Energy Efficiency of Housing in San Francisco.
- Policy 2 Strengthen enforcement of the State's residential energy conservation building standards.
- Policy 3 Expand the environmental review process to encourage the use of additional measures to save energy in new housing.
- Policy 5 Emphasize energy conservation in local government housing assistance programs.

Commercial Objective 3

Promote Effective Energy Management Practices to Maintain the Economic Vitality of Commerce and Industry.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- Policy 2 Insure adequate local enforcement of the State's non-residential energy conservation building standards.
- Policy 3 Expand the environmental review process to encourage the use of additional methods to save energy in new commercial buildings.
- Policy 4 Promote commercial office building design appropriate for local climate conditions.
- Policy 5 Encourage the use of integrated energy systems to save energy and reduce operating costs.

Transportation Objective 4

Increase the Energy Efficiency of Transportation and Encourage Land Use Patterns and Methods of Transportation which Use Less Energy.

- Policy 1 Increase the use of the transportation alternatives to the automobile.
- Policy 2 Provide incentives to increase the energy efficiency of automobile travel.
- Policy 3 Encourage an urban design pattern that will minimize travel requirements among working, shopping, recreation, school and childcare areas.
- Policy 6 Promote alternate work arrangements which will contribute to more efficient transportation use.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Alternate Energy

Objective 5 Promote the Use of Renewable Energy Sources.

Policy 1 Develop land use policies that will encourage the use of renewable energy sources.

Financing

Objective 7 Develop Financing Opportunities to Implement Local Energy Programs.

Policy 1 Promote government and private financing partnerships to carry out local energy programs.

2.3 Other Local, Regional and State Plans

2.3.1 Central Waterfront Plan (1980)

Overall Goal

The overall goal of this Plan is to create in the Central Waterfront area a physical and economic environment conducive to the retention and expansion of San Francisco's industrial and maritime activities.

Land Use

Objective 1: Strengthen and Expand Land Uses Essential to Realizing the Economic Potential of the Central Waterfront.

Policy 1: Encourage the intensification and expansion of industrial and maritime uses.

Policy 2: Preserve and protect the Central Waterfront area as a land base for San Francisco industry. Prevent the conversion of land needed for industrial or maritime activity to non-industrial use.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

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- Policy 3: Promote new development which has minimal adverse environmental consequences. Assure that the adverse environmental impacts of new development are fully mitigated.
- Objective 2: Maintain and Develop Additional Uses on Land Surplus to Industrial and Maritime Needs.
- Policy 1: Preserve existing residential uses and develop new housing.
- Policy 2: Retain existing commercial uses and expand as needed to serve increases in the working and residential populations.
- Policy 3: Improve, expand, and develop recreational areas at established public access points along the waterfront enabling public use and enjoyment of the shoreline.
- Industry
Objective 1: Retain, Expand, and Protect Industrial Activity in the Central Waterfront.
- Policy 1: Promote industrial expansion through maximizing and intensifying the use of existing facilities and properties, rehabilitating older industrial structures, and developing vacant land with industrial uses.
- Policy 2: Encourage the consolidation of rail operations and the removal of unnecessary tracks and facilities to expand the supply of available land. Assure no reduction occurs in needed present or future rail service to San Francisco.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- Policy 3: Develop and promote training programs to target local residents for employment opportunities resulting from new economic development.
- Policy 4: Establish and promote financing programs to provide funds for local business development.
- Policy 5: Support the expansion of small businesses and firms in newly emerging industries.
- Policy 6: Encourage the growth of firms which strengthen or complement the maritime operation of the Port, either by directly engaging in maritime activities or by providing ancillary services.
- Policy 7: Remove antiquated and overly restrictive provisions from City codes that impose undue burdens on industry and restrict expansion efforts, but maintain requirements designed to protect and enhance environmental quality.
- Policy 8: Avoid encroachment of incompatible land uses on viable industrial activity by appropriately zoning and mapping industrial districts. Resolve potential land use conflicts in a manner that recognizes the importance of industrial activity to the well-being of San Francisco.
- Policy 9: Deliver key public services, including police, fire, sanitation and transportation at levels necessary to support and encourage industrial activity.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 10: Assist firms displaced from other parts of San Francisco, especially those displaced by downtown office expansion, in locating in the Central Waterfront.

Policy 11: Attract new industries that create employment opportunities for City residents, add tax revenues in excess of public service costs, and strengthen and diversify San Francisco's economic base.

Maritime
Objective: Retain and Expand Maritime Activity Along the Central Waterfront.

Policy 1: Retain all existing maritime general cargo facilities along the Central Waterfront (Piers 48, 50, 70, and 80).

Policy 2: Retain all existing ship repair operations along the Central Waterfront (Pier 54 and the Bethlehem Yard).

Policy 3: Encourage the expansion and modernization of maritime cargo handling facilities and the development of container facilities along the Central Waterfront.

Policy 4: Reserve land adjacent to the waterfront as required for maritime support use.

Commerce
Objective: Provide a Quantity and Mix of Commercial Activities Necessary to Serve the Local Needs of the Central Waterfront.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 1: Promote the retention and improvement of existing commercial activities that support local residential, industrial, maritime, and recreational uses.

Policy 2: Support the expansion of commercial uses if needed to serve demand generated by new development.

Policy 3: Prevent new office development, except that which serves a principal industrial or maritime use in the Central Waterfront.

Policy 4: Encourage water-oriented commercial recreation activities at public access points along the shoreline.

Residence
Objective:

Retain and Improve Existing Residential Uses in the Central Waterfront and Develop a Limited Quantity of New Housing.

Policy 1: Encourage the preservation and rehabilitation of the existing housing stock.

Policy 2: Encourage additional housing within established residential areas.

Policy 3: Promote major new residential development near China Basin Channel on under-utilized land suitable for housing and surplus to the needs of industry.

Policy 4: Require new residential developments to include an adequate supply of low and moderate income units and provide a mix of units types to accommodate a variety of household sizes.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 5: Provide rent supplements and assist in local home ownership to avoid displacement of existing residents.

Transportation
Objective 1:

Improve the Accessibility of the Central Waterfront.

Policy 1: Improve City-wide and regional transit access to the Central Waterfront.

Policy 2: Establish an official truck route system along the designated major and secondary thoroughfares to facilitate truck movements within and through the Central Waterfront and to minimize the adverse impacts of truck movement on adjacent residential, commercial, and recreational land uses.

Policy 3: Extend a Light-Rail Vehicle line through the Central Waterfront along the Third Street corridor connecting to the Southern Pacific Depot and the proposed Embarcadero rail line.

Policy 4: Improve transportation access on Third Street by implementing design changes in traffic lanes, turning bays, and signal timing.

Policy 5: Improve regional highway access by completing the proposed State Route 230 (Hunter's Point Parkway) and the proposed on-ramp to Interstate 280 immediately south of Islais Creek Channel.

Policy 6: Provide adequate rail and truck access to all maritime piers.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Objective 2: Improve Transportation Conditions Within the Central Waterfront.

Policy 1: Improve internal vehicular circulation through the construction, repair, and maintenance of public streets, and the provision of appropriate signing and lighting.

Policy 2: Maintain and construct sidewalks on streets with pedestrian traffic.

Policy 3: Encourage the use of public transit, carpooling/vanpooling, and jitney service to minimize the consumption of scarce industrial land for commuter parking lots. Where demand for parking can be clearly established, give preference to parking structures as opposed to open lot parking.

Policy 4: Provide short-term parking to support wholesale, design, and related activities. Develop parking treatments for on-street spaces to assure short-term turnover of vehicles.

Policy 5: Require off-street parking facilities for freight loading and service vehicles in all major new developments and incorporate these in older buildings where feasible.

Provide short-term loading spaces on the street for routine deliveries and essential services, with strict enforcement of time limits.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 6: Develop a parking reservoir to serve downtown travelers on under-utilized land north of China Basin Channel beneath the stub-end of Interstate 280. Provide frequent shuttle service from the reservoirs to downtown using transit, jitneys, or other means.

Policy 7: Encourage new developments to provide pedestrian amenities and transit access improvements such as pedestrian resting areas, bus stop shelters, and transit information displays.

Recreation and Open Space

Objective: Provide Public Access and Recreational Opportunities Along the Shoreline.

Policy 1: Maintain and improve the quality of existing shoreline recreational areas at Central Basin and Warm Water Cove.

Policy 2: Expand existing recreational areas and establish new ones at China Basin Channel and Islais Creek Channel, so long as compatible with present or planned maritime activity.

Policy 3: Provide public overlooks, viewing areas, and open spaces with convenient pedestrian access in areas of maritime activity.

Urban Design Objective:

Achieve an Aesthetic Urban Form in the Central Waterfront Consistent With the Economic Development of the Area.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 1: Reinforce the visual contrast between the waterfront and hills by limiting the height of structures near the shoreline. Relate the height and bulk of new structures away from the shoreline to the character of the topography and existing development.

Policy 2: Protect and create views of the downtown skyline and the Bay. Design and locate new development to minimize obstruction of existing views.

Policy 3: Encourage the rehabilitation of architecturally or historically significant buildings with reuse potential.

Policy 4: Encourage the inclusion of recreational facilities, outdoor leisure areas, and public open spaces in new private developments.

China Basin Area

Objective 1: Expand Maritime Activity in the China Basin Area.

Policy: Continue and expand the use of Piers 48 and 50 for general cargo and add a general cargo facility at Pier 62.

Objective 2: Provide Waterfront Public Access and Recreation in the China Basin Area.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- Policy: Develop a new waterfront recreation area along China Basin Channel. Develop both sides of the Channel west of Fourth Street for public access, viewing, and waterfront recreation. Develop a pedestrian promenade and bicycle path on the north side of the Channel between Third and Fourth Streets. Develop public viewing and fishing areas where compatible with Port maritime activities west of Pier 62. Maintain existing commercial-recreation and housing uses.
- Objective 3: Develop a Mix of New Uses on Surplus Rail Property in the China Basin Area.
- Policy 1: Identify land surplus to the operating needs of the railroads and the Port. Encourage the consolidation of rail operations, either internally or jointly, as a means of releasing land for alternative uses.
- Policy 2: Consistent with the operating needs of the railroads, develop a mixed-use neighborhood with predominantly residential uses in the area south of China Basin Channel and west of Third Street. Include compatible commercial and light industrial uses.
- Objective 4: Relate the Scale of New Development to San Francisco's Distinctive Hill Form, to the Adjacent Waterfront, and to Existing Development.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Policy 1: Encourage major new development in the China Basin area to take the form of a cluster of buildings surrounded by progressively lower structures stepping down to the Channel to create a hill-like shape compatible with San Francisco's natural setting.

Policy 2: Minimize blockage of private and public views and maintain, to the extent feasible, sightlines from Potrero Hill to the waterfront and downtown.

2.3.2 San Francisco Bay Area Seaport Plan (1982)

Note: The Seaport Plan policies are incorporated herein because the Plan addresses proposed improvements to Port Authority and Santa Fe Pacific Realty Corporation land east of Third Street. The policies for port use of that land are in the Seaport Plan; the conceptual plan for this land is set forth in the Conceptual Maritime Master Plan for the Southern Waterfront document incorporated into the Port's Master Plan in 1982.

Marine Terminal Policies

- I. Major marine terminal developments are significant additions to capacity or developments involving more than a small amount of Bay fill. The need for a major development shall be demonstrated in one of the following ways:
 - o The development of new container terminal berths shall be consistent with baseline demand estimates using a lead time of six years measured from the filing of a BCDC permit application.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- o The need for development of other types of marine terminal berths shall be demonstrated by the project proponent, using the cargo forecasts, the demand estimates in Table 3, and other evidence as necessary. Lead time for such terminals shall be the time for project construction.

Major marine terminal development shall occur at those sites classified as near-term and active by this Plan.

4. Except as provided in Policy 19, the long-term development sites and sites not designated in this Plan shall be considered for development only after all the near-term sites have been permitted for use.
6. To avoid unnecessary Bay fill and other adverse environmental effects, and to encourage prompt consideration and full use of authorized facilities:
 - o The Bay Area ports are encouraged to cooperate through NORCAL or by other agreements among themselves to avoid facilities being proposed that duplicate needed capacity. If, however, two or more applications for marine terminals of the same type (i.e., container terminal compared to container terminal, auto terminal compared to auto terminal, etc.) are being considered at the same time, and the need for all of them cannot be demonstrated, only those projects with the least adverse environmental effect on the Bay and that are needed shall be authorized.
8. Marine terminal development at sites that are adjacent or near to environmentally sensitive areas shall be designed to protect those areas from any significant adverse effects of marine terminal construction and operation.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Ground Transportation Policies

12. Local, state and federal governments should not take actions, such as land use decisions, public works projects or rail abandonments, that would impede access to the marine terminal sites identified in the Seaport Plan. Funding for a transportation project shall be approved or endorsed only if the proposed development the project is intended to serve is consistent with the policies of the Seaport Plan.
14. Local and regional transportation planning and funding priorities shall facilitate the efficient movement of goods by rail and truck to and from the Bay Area ports.

San Francisco Bay Plan (1979)

- Objective 1: Protect the Bay as a great natural resource for the benefit of present and future generations.
- Objective 2: Develop the Bay and its shoreline to their highest potential with a minimum of Bay filling.

2.3.3 I-280 Concept Program—Conceptual Approval by the Board of Supervisors, November 1985 Currently before Board of Supervisors for Approval of Policy

The Board of Supervisors has approved its concept:

- o A package of projects to be developed including the following in the Mission Bay area:
 - Removal of the I-280 elevated structure between Third and Sixth Streets, construction of new on and off ramps into the King/Berry Corridor, and improvement of King and Berry Streets.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- Extension of the Muni Metro from the Embarcadero Station to the Caltrain Commuter Station in Mission Bay.
- Construction of the Muni E--Embarcadero Streetcar line from Fisherman's Wharf area to Mission Bay.
- o An allocation of available I-280 federal assistance to the selected projects.
- o Submittal of initial grant applications for preliminary engineering and federal environmental work on the selected projects.

2.3.4 Conceptual Maritime Master Planning for Southern Waterfront--Port of San Francisco (1982)

Designates Piers 48 through 56 as Mission Rock Container Terminal including lands between the waterfront and Third Street for development as Phases IV through VI of the Maritime Master Plan.

2.3.5 Capital Improvement Program and Short-Range Transit Plan, San Francisco Municipal Railway (1985-1990)

Long-Term Programs (10-year plan horizon)

Motor Coach Route Electrification--I5-Third is recommended as second highest priority in terms of potential cost savings.

Articulated Vehicles--Acquisition of 160 articulated vehicles for both diesel and trolley coach service.

Extension of Light Rail Vehicle (LRV) Service from Embarcadero Station to Mission Bay.

Construction of E-Embarcadero Streetcar Line from Fisherman's Wharf to Mission Bay.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Construction of F-Market Streetcar Line from Upper Market to intersect with E-Line at the Embarcadero and possible extensions to Mission Bay and Showplace Square.

2.3.6 Caltrain-Peninsula Commute Service—Five-Year Plan (1985-1990)

California Department of Transportation, District 04, June, 1985.

Service Expansion--Service will be expanded from 46 to 52 trains per day in 1985/86.

Capital Plan--Extension of service to downtown San Francisco and downtown San Jose and service expansion to 60 trains per day expected to occur in 1991/92.

2.3.7 Regional Transportation Plan—Metropolitan Transportation Commission (1985)

West Bay Corridor Improvement Proposals

WB-1 Local Transit--Muni

The following projects are identified in MTC's New Rail Transit Starts and Extension Policy

- o Muni Metro Embarcadero Station turnaround
- o Muni Metro J Line extension
- o Muni Metro extension to Peninsula Commute Service (Caltrain) at 4th and Townsend Streets
- o Muni E Streetcar Line
- o Muni F Streetcar Line

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

WB-2 Trunk Transit

- (a) Peninsula Commute Service (Caltrain) and Trunk Bus Services (San Francisco to San Jose).
 - o MTC's New Rail Transit Starts Policy recommended near-term state and federal funding to modernize the Peninsula Commute Service (Caltrain).
 - o MTC's Peninsula Mass Transit Study recommends that interim improvements should not pre-empt future modal choices and the following improvements should proceed:
 - Acquisition of the Southern Pacific right-of-way
 - Caltrain station acquisition and improvement program
 - Muni Metro extension to Caltrain terminal at 4th and Townsend Station
 - Caltrain maintenance facility
 - BART Colma/Serramonte Station
- (c) Trunk transit in Third Street Corridor, San Francisco

Provide trunk transit service to connect with the Geary Corridor, Peninsula Commute Service (Caltrain) Station, and Transbay Terminal. The corridor could serve as a possible secondary route to SFO, and could be converted to an upgraded Peninsula rail system.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

No specific proposals are currently defined. Proposed extensive development of the Mission Bay area could have significant impacts on existing transportation facilities and services and could necessitate major new transportation facilities. Existing employment activities and lower income neighborhoods in the corridor would benefit from improved transit service.

2.4 Previous Mission Bay Site Plans

This section presents the principles and objectives found in text and graphics associated with each of the site plans described below.

2.4.1 October 16, 1984 Letter from Mayor Feinstein to Southern Pacific Land Company (SF/SP) (1984)

Building Heights: No building will exceed eight stories in height.

Residential Units: At least 7,577 residential units will be constructed on the sites indicated on the attached map. Units will contain between 750 and 1,200 gross square feet (average size 850 gross square feet) with a price range of \$105,000 to \$288,000 (average price \$182,000) in 1984 dollars. Costs will be indexed for any increase in the Consumer Price Index, San Francisco Bay Area, during build-out period.

Affordability: At least 30 percent of the residential units will be "affordable" units. As used here, "affordable" means a sales price between \$105,000 and \$150,000 (average price \$125,000) in 1984 dollars. SF/SP will price 15 percent of the units (1,137) at "affordable" prices.

Research and Development (R&D): Up to 2,600,955 square feet of space suitable for research and development uses will be constructed on the site indicated on the attached map.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Office: Up to 4,124,800 square feet of primarily large floor area office space suitable for "back office" uses will be constructed on the sites indicated on the attached map.

Retail: Up to 201,000 square feet of retail space will be constructed in the area, with a major center in the westerly portion of the area as shown on the attached map. Lesser retail concentrations may occur in other portions of the project not necessarily on the sites shown on the map.

Rate of Construction: Construction of office and R&D space and of housing will proceed at the same pace. This means that for every 914 square feet of office and R&D space constructed, at least one residential unit will be constructed.

Rail Access: Development of Mission Bay will not cause the cessation or in any way impair rail access to businesses and Port facilities located in San Francisco.

Site Improvements: The parks, lagoons, canals, waterways and public open space are to be constructed as identified in plans previously submitted by Southern Pacific.

Freeway: The I-280 ramp east of 6th Street should be demolished, with the cost to be borne by SF/SP. The Mayor will propose that new on- and off-ramps be constructed by the State Department of Transportation with I-280 transfer funds.

Caltrain: The current commute train station should be relocated by SF/SP to the area of 7th and Channel Streets, subject to the retention of a right-of-way for tracks to the downtown area should the State Department of Transportation desire to proceed with construction of a downtown terminus. The Mayor will use her good offices to seek the necessary state approvals and funding for station relocation.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Muni-Metro Extension: The Mayor will use her best efforts to get the Muni-Metro light rail system extended to the relocated Caltrains station to 7th and Channel Streets, and will encourage its eventual extension south and east through the project to 16th Street. SF/SP will donate to the City rights-of-way within the area for these extensions.

Street Vacations: Currently improved and unimproved public streets and sidewalks within the project area and proposed for removal by SF/SP will be transferred to SF/SP and in exchange all new streets and sidewalks will be deeded to the City by SF/SP. If the fair market value of streets deeded to the SF/SP exceeds the fair market value of streets accepted by the City, SF/SP will pay the difference to the City.

Public Park: A landscaped park of approximately 19 acres for active recreational use should be developed on the property of the Port of San Francisco east of Third Street and north of Mission Rock Street at China Basin as shown on the attached map. The Mayor will request the Port Commission to lease the property to SF/SP for 66 years without charge. The park will be open to the general public at no cost. Cost of development and maintenance of the park will be borne by SF/SP. However, if the City receives monies for the street vacations, those monies will be applied toward the development costs. SF/SP will not be responsible for repair or improvement of any sea wall.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

2.4.2 Santa Fe Pacific Realty Corporation Plan (1984)

The current Santa Fe Pacific Plan corresponds to the stipulations set forth in the Mayor's Letter of October 1984 with regard to building heights, the approximate number of residential units, unit size, as well as R&D, office and retail square footage. Parking was accommodated at a ratio of one space per 750 square feet of office and one space per 1,000 square feet of retail and R&D. Parking for residential units was planned at one space per unit. Feature buildings were intended to be located at the discretion of the landowner. Site planning principles are expressed in the following illustration.

SANTA FE PACIFIC REALTY CORP. PLAN

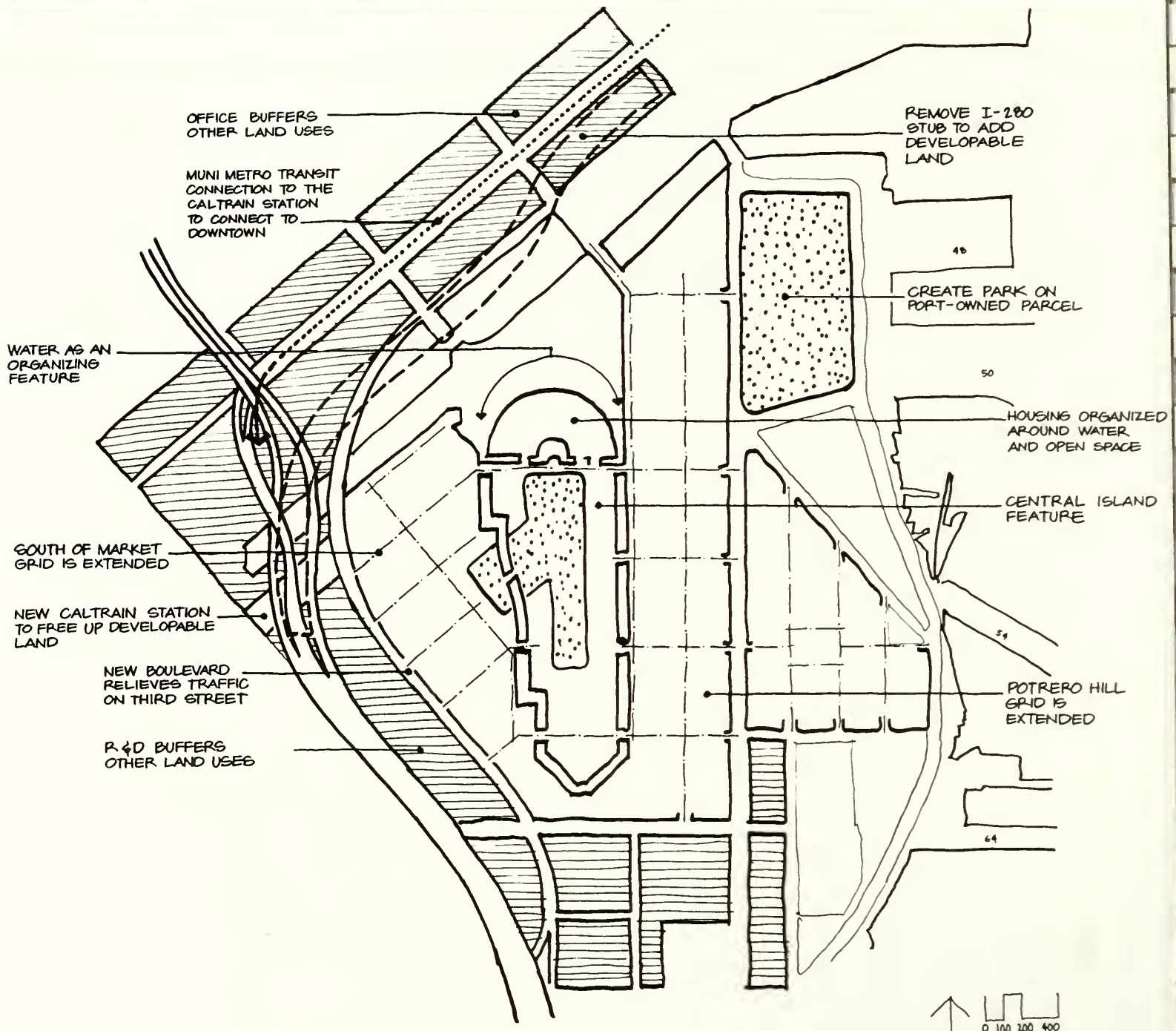
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2.0 PREVAILING PRINCIPLES AND OBJECTIVES

2.4.3 Community Plans

Introduction

There has been much community interest in the Mission Bay/Central Waterfront area for many years. For more than a year, individuals and community-based organizations have been coming together to share plans and ideas and participate in the information network provided by the Mission Bay Clearinghouse.

The Department of City Planning has encouraged citizen involvement throughout the process of developing a scope of work, selecting consultants and providing input in the design of the research to date for this planning effort.

Interested groups both within and outside the Clearinghouse have developed a variety of community plans outlining their vision for Mission Bay.

This section outlines twelve currently existing community plans, their overall planning concept and their major principles, and objectives. The principles and objectives are presented here in the five planning topics. They are: Land Use/Urban Design/Open Space; Transportation and Utilities; Housing and Neighborhoods; Culture and Community Services; and Socioeconomics.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

The plans reviewed vary in scope and detail as the plan illustrations throughout this section indicate. Some emphasize a single community concern. Others are comprehensive, offering very specific objectives, including design guidelines. Some plans support a primarily residential community with a large central open space including a tidal park, and including recreational and cultural facilities. There is emphasis that the residential development embody the character of existing San Francisco neighborhoods, such as the Marina and North Beach, allowing for a diversity of structures and ownership types. Others recognize the importance of a mixed-use development for project feasibility and offer suggestions for limited office, commercial, light industrial and research and development acreage, with strict height limits, and limited parking.

All plans addressing the transportation issues adopt a transit first principle for the development, although the details on exactly what kind of public transportation is most appropriate, and where it should be located, differ. There is community support for pedestrian and bicycle pathways throughout the development, and convenient access to a neighborhood commercial district.

Community plans also focus on the necessity of the housing developed to at least meet the needs of the expected work force in the community, (net housing) and some plans maintain the necessity to address San Francisco overall need for affordable housing, including specific cost limitations. There is concern that housing opportunities include a variety of housing types and ownership structures, including opportunities for rental housing and residential hotels.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

The community plans reflect the integration of cultural and community services throughout the planning and development of the site. Cultural and community facilities discussed include: artists live/work space, gallery and theater arts facility, community center, child care facility, health services, and services for senior citizens.

There is concern that all jobs, both construction and permanent created by the development, meet the employment needs of current San Francisco residents, and that neighborhood retail and other space be made available for small businesses and include affordable leases for those businesses.

Not all the plans reviewed are currently in written form, nor do they all comment on each issue area. Where a written plan does not exist, notes taken from presentations given at the Workshop on September 19-20, 1985, as part of the planning process are used here to document the communities' concerns and vision.

Community Plans

The Community Plans reviewed below are:

1. Mission Creek Conservancy
2. Mission Bay Clearinghouse
3. San Francisco Tomorrow (Mission Bay Gardens)
4. Coalition of San Francisco Neighborhoods
5. Council of Community Housing Organizations (CCHO)
6. Potrero League of Active Neighbors (PLAN)
7. Sierra Club and San Francisco League of Environmental Voters

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

-
8. Potrero Hill Community Development Corporation
 9. Potrero Hill Boosters and Merchants
 10. San Francisco Planning and Urban Research Corporation (SPUR)
 11. Artists Equity
 12. South of Market Planning Alliance

The details of specific principles and objectives for all the plans surveyed follow:

2.4.3.1. Land Use/Urban Design/Open Space

Mission Bay Clearinghouse

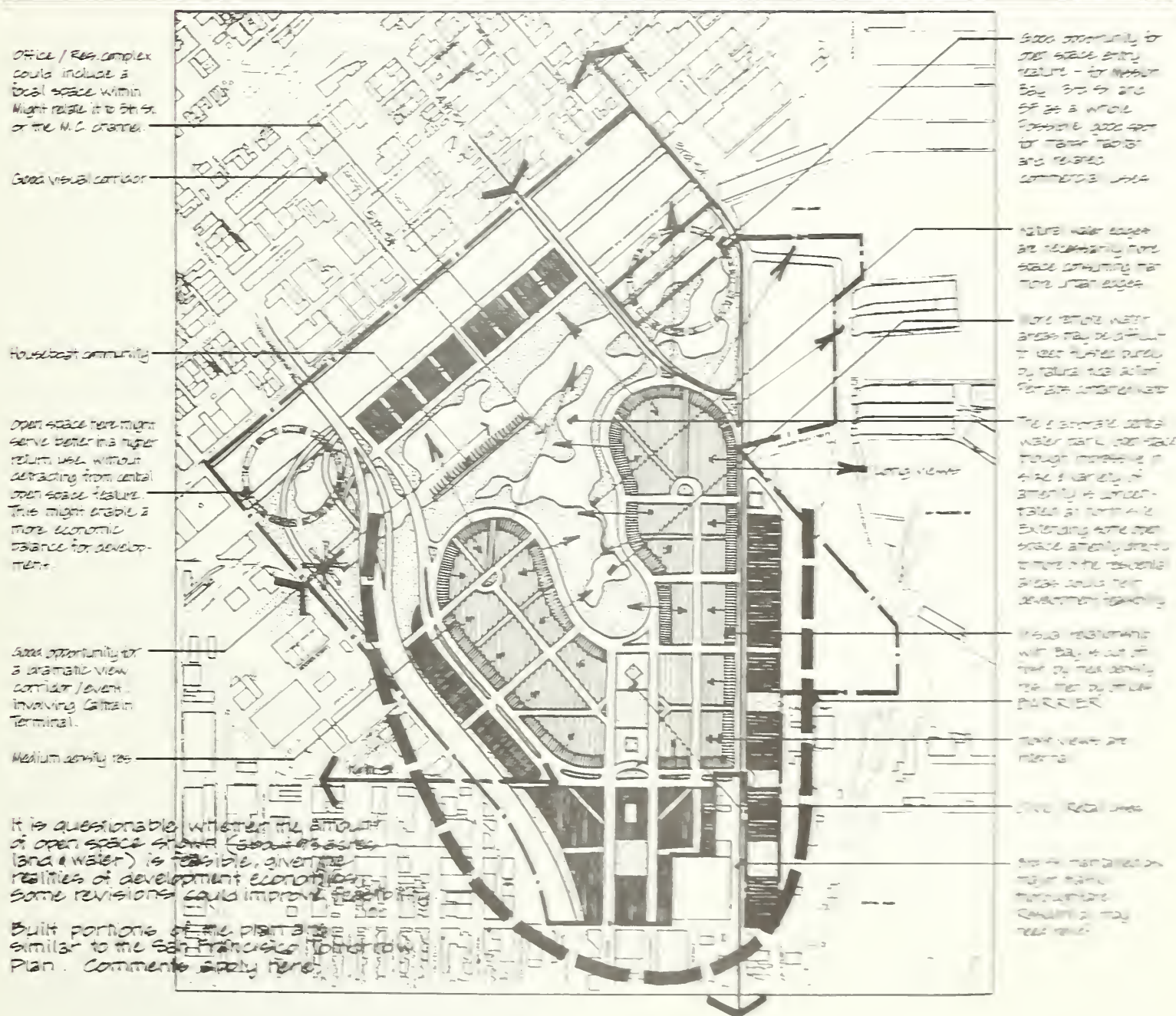
Principle: Mission Bay should be a mixed-use neighborhood with predominantly residential uses and well connected to surrounding neighborhoods.

Objectives:

- o Residential uses should be located away from the noise, pollution and sight of I-280, Third Street, and the S.F. train depot.
- o There should be less than a 1:1 ratio of off-street parking spaces to units.
- o The existing boat/houseboat harbor community should be integrated appropriately into the new development.
- o Neighborhood-serving retail uses should be located within residential areas, preferably local along transit corridors.

Mission Bay
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JAMES L. HARRIS
PHILIP WILLIAMS & ASSOCIATES
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2.0 PREVAILING PRINCIPLES AND OBJECTIVES

-
- o The non-office commercial component of Mission Bay should consist of blue/new collar office service industries.
 - o Office uses should be integrated with both commercial/retail areas and research and development areas.
 - o Port land associated with Piers 48 and 50 should be retained for maritime uses.
 - o A central focus of Mission Bay should be a major tidal park, preserving and enhancing the tidal ecology.
 - o The residential areas should be at human scale, with variety and texture similar to San Francisco's present low-rise, wood frame neighborhoods.
 - o Street configuration should provide views of open spaces.
 - o Tall buildings should be stepped back to provide maximum light to the streets and other public areas.
 - o Streets and buildings should be oriented to allow maximum solar access to windows, gardens and solar collectors.
 - o Street widths should vary.
 - o Public open space should be designed to be flexible, and to take full advantage of the water resources, including recreational facilities.

Mission Creek Conservancy

Principle: Create a major central open space with an expanded Mission Creek water area at the heart of a new residential neighborhood.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Objectives:

- o Develop a park which serves its neighborhood, the city and the region.
- o Preserve memory of Mission Bay as a wetlands.
- o Support existing wildlife.
- o The park be a repository of the area's rich natural, cultural and maritime history.
- o The setting of the present boat/houseboat community be enriched.
- o Create accessible recreational opportunities.
- o Create a residential community in close proximity to the park system, yet designed to allow individual privacy.
- o Each dwelling unit be within two blocks of the park.
- o Design waterways, berms or hollows, and by landscaping allow different activities to occur close to, yet separated from each other.
- o Define the development by varying the size of residential streets throughout the residential community.

San Francisco Tomorrow Mission Bay Gardens

Principle: Develop a new residential neighborhood and park at Mission Bay that is an attractive community for a diverse population and offers the public amenities needed by citizens at all stages in their lives.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Objectives:

- o The development should provide for the following uses and building areas: (1) 9,266 living units, using 9.27 MSF; (2) 0.78 MSF of neighborhood retail; (3) 0.54 MSF of light Industrial; (4) 1.18 MSF of back office/research; (5) 2.00 MSF of commercial office; (6) .40 MSF for community culture and recreation; and (7) 35 acres of open space.
- o Create a variety of public open spaces for active and passive recreation.
- o Design a variety of small neighborhood parklets.
- o Create ample semi-private spaces.
- o Design a variety of street widths and characters ranging from short intimate lanes to a landscaped grand boulevard.
- o Provide neighborhood commercial zones within walking distance of residential districts.
- o Protect structures with historic or architectural merit.
- o Preserve views from Potrero Hill.
- o Develop mixed-use structures.

Coalition for San Francisco Neighborhoods

Principle: Produce a viable urban neighborhood preserving the character and traditions of San Francisco and which is an integral and exemplary component of the Urban fabric of the City of San Francisco.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Objectives:

- o Zone Mission Bay exclusively as a residential neighborhood with neighborhood serving commercial districts and a major park.
- o The development should include small buildings on small lots, designed to enhance individuality, variety and architectural texture.
- o Vistas should be carefully planned.
- o The development should consist of a principal commercial street and community facilities.

Potrero Hill League of Active Neighbors (PLAN)

Principle: Develop the Mission Bay site as a primarily residential neighborhood, resulting in a surplus of housing over that required by new office workers in the development.

Objectives:

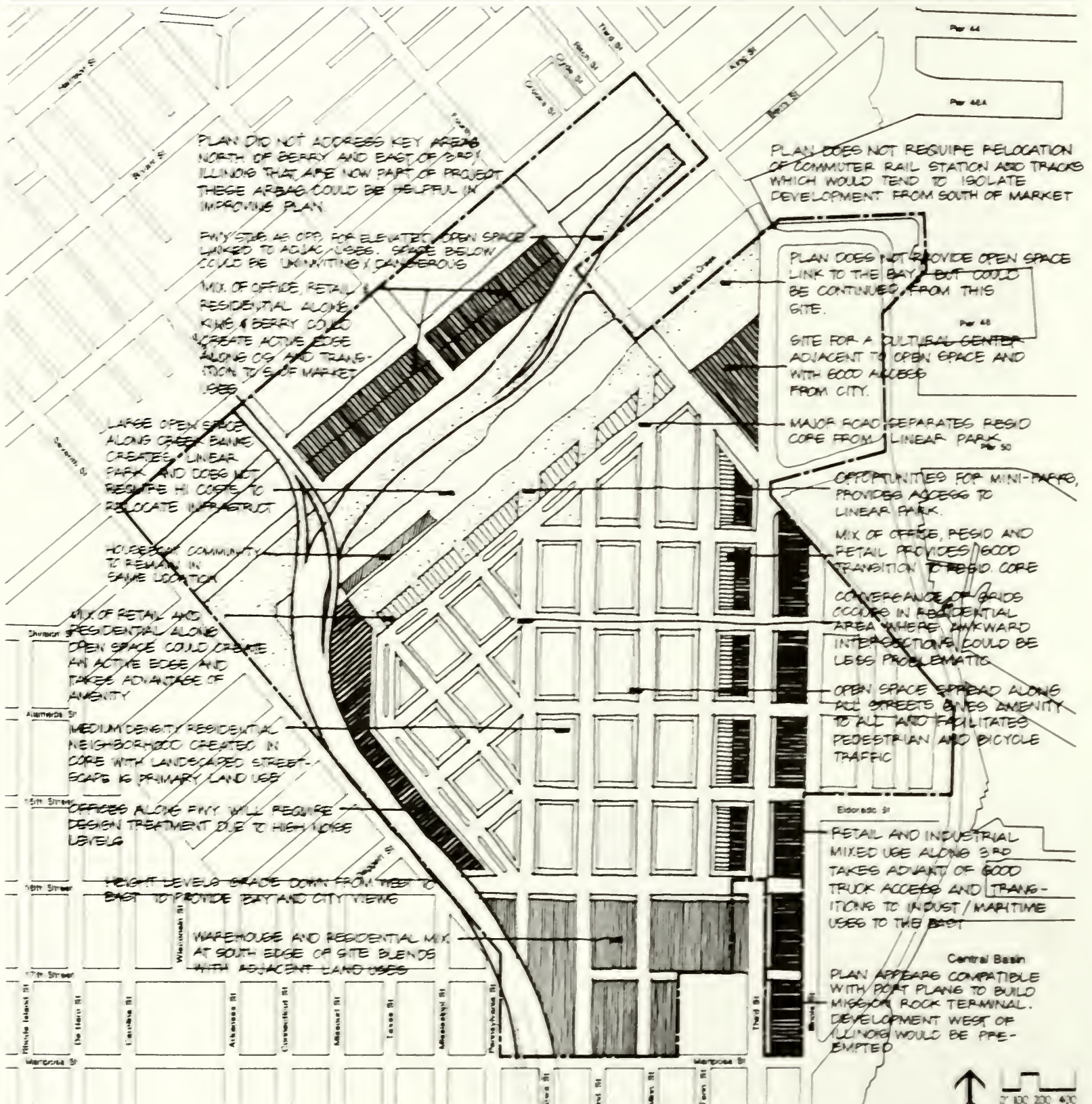
- o Develop three and four story residential structures of a density similar to the Marina and Noe Valley districts of San Francisco.
- o Require a six story height limit on structures housing commercial and office space.
- o Develop a linear park alongside Mission Creek.
- o Create corner "mini-parks", bike paths, schools, churches and libraries.

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2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Sierra Club and San Francisco League of Environmental Voters Objectives:

- o Develop a major tidal park.

Potrero Hill Boosters and Merchants

Principle: Develop the Mission Bay Project in a manner that is compatible with the Potrero Hill neighborhood and the long-range plans of the city of San Francisco.

Objectives:

- o Preserve views of the Bay, Bay Bridge, East Bay and downtown for Potrero Hill residents.
- o Design a major public park of the quality of Golden Gate Park, accessible to all San Franciscans, and as a centerpiece to the Mission Bay development.
- o Enhance and expand the natural qualities of the present tidal channel.
- o Preserve the present community of boaters and houseboaters.
- o The primary land use should be housing.

SPUR

Objectives:

- o Provide 100 acres of combined land and water.
- o Design a linear access lake.
- o Consolidate maritime activities and provide access to the Bay.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Artists Equity

Objectives:

- o Design buildings to provide raw space that artists can use as live/work space.

South of Market Planning Alliance

Principle: Plan and develop Mission Bay to meet the needs of San Franciscans for affordable housing, jobs for the unemployed, wonderful parks, good public transit and honest neighborhood feeling.

Objectives:

- o Support the Mission Creek Conservancy's "Mission Creek Master Plan" (see page 1).

2.4.3.2 Transportation and Utilities

Mission Creek Conservancy

Principle: Provide a "transit first" priority throughout the design and development of the site.

Objectives:

- o Maintain a series of bicycle and pedestrian pathways throughout the site.
- o Design transportation system in a way which avoids conflicts between maritime passage and vehicular traffic.
- o Build a short span (fixed) bridge over a new channel, just south of the present bascule (lift) bridge.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

San Francisco Tomorrow

Principle: Improve all forms of transportation to the area and through the area.

Objectives:

- o Provide light rail and other surface transportation that will strengthen the service to surrounding areas.
- o Strengthen the regional SP commute line as a means of public transit.
- o Develop an all-weather station and a tie-in to existing and new Muni service.
- o Preserve and guarantee the same quality of rail service to all present and proposed port facilities and to existing rail-served businesses.
- o Provide full pedestrian access and public use at an improved waterway.

Coalition for San Francisco Neighborhoods

Principle: Mission Bay should be designed as an urban district which is oriented toward pedestrian and transit travel, rather than automobile travel.

Objectives:

- o Muni-Metro should provide the primary transit service.
- o Transit service should penetrate to the heart of the project.
- o Limit parking.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

-
- o Locate neighborhood-serving commercial districts in such a way as to minimize the need for Mission Bay residents to use cars.
 - o Provide for bikeways and pedestrian walks.
 - o Remove I-280.

Potrero Hill League of Active Neighbors (PLAN)

Objectives:

- o Provide a place for pedestrians, bicycles, automobiles and public transportation.

Sierra Club and San Francisco League of Environmental Voters

Objectives:

- o Design a new metro system serving Mission Bay residents.

Potrero Hill Boosters and Merchants Association

Principle: Include an extensive transportation study in the Environmental Impact Report.

South of Market Planning Coalition

Principle: The transit Impact Fee must apply to all office development in the project.

Principle: Include an extensive transportation study in the Environmental Impact Report.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

2.4.3.3 Housing and Neighborhoods

Mission Bay Clearinghouse

Objectives:

- o Identify housing demand generated by any proposed development at Mission Bay, citywide needs, and the impact of new development on the surrounding communities.
- o Develop an affordability program that will maximize the ability of new development to meet the needs analyzed above, including alternative ownership possibilities, and the needs of different family sizes and incomes.
- o Provide a "Neighborhood Protection Plan" for maintaining the affordability of existing adjacent communities.
- o Create an active role and mechanism for City and/or Non-profit Housing Development Corporations (H.D.C.'s) to obtain and construct affordable housing in adjacent neighborhoods.
- o Examine a plan for Mission Bay that creates a minimum of 9,000 units.
- o Maximize the accessibility of the entire community, as well as the accessibility/adaptability of individual units.

Mission Creek Conservancy

Principle: Create a predominantly residential, low rise, mixed income community.

San Francisco Tomorrow

Principle: Develop a new residential neighborhood serving a diverse population.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

Objectives:

- o Provide 9,200 residential units.
- o Provide maximum on-site housing to satisfy the need generated by all non-residential uses.
- o Maintain the variety of existing lifestyles (houseboats, etc.) as part of the diversity of housing types.

Coalition of San Francisco Neighborhoods

Principle: Develop a primarily residential community.

Council of Community Housing Organizations (CCHO)

Principle: Create a Balanced Community with a minimum of 50% affordable housing.

Objectives:

- o Consider a 100% housing option as part of the planning process.
- o Mission Bay create a surplus of housing as well as fulfilling the housing demand created by its new workforce.
- o Housing be priced within reach of families whose household incomes are no more than the median income levels for the Bay Area.
- o One-half of the affordable units should be affordable to households with income lower than the median income levels for the Bay Area.
- o Develop a diversity of housing types including mixed-use development and residential hotels.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- o Provide rehabilitated affordable housing in the existing neighborhoods that will be subjected to gentrification pressures by the Mission Bay project.

Potrero Hill League of Active Neighbors (PLAN)

Principle: Develop a primarily residential neighborhood, resulting in a surplus of housing over that required by new office workers in the development.

Sierra Club and the San Francisco League of Environmental Voters

Objectives: Provide sufficient housing to meet the needs of any new commercial development on the site.

Potrero Hill Community Development Corporation

Principle: Residential development should be mixed income housing.

Objectives:

- o Provide affordable housing in the following ratios:
 - (1) 25% for families from 0-50% of the median income;
 - (2) 25% for families from 50-100% of median income;
 - (3) 25% for families from 100-120% of median income;
 - (4) 25% for families from 120% and above the median income.

2.4.3.4 Culture and Community Services

Mission Bay Clearinghouse

Objectives:

- o Remove and reconstruct a portion of the dead-end sewerbox at the south bank of Mission Creek near Fourth Street, to allow a more successful channel and park design.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

- o Integrate cultural activities and works of art as part of the design of the park.

San Francisco Tomorrow

Objectives:

- o Define and relate non-residential development to a comprehensive network of civic, cultural, and daytime/special event spaces.
- o Provide cultural, educational, daycare, health and athletic facilities to complement both the needs of the projected new users and the surrounding neighborhoods.

Coalition of San Francisco Neighborhoods

Objectives:

- o The development should have a focus, consisting of a principal commercial street and community facilities.

2.4.3.5 Socioeconomics

Mission Creek Conservancy

Principle: Develop revenue generating facilities which would provide revenues for general maintenance and operation of the Park, and to fund a portion of the development costs as well.

San Francisco Tomorrow

Objectives:

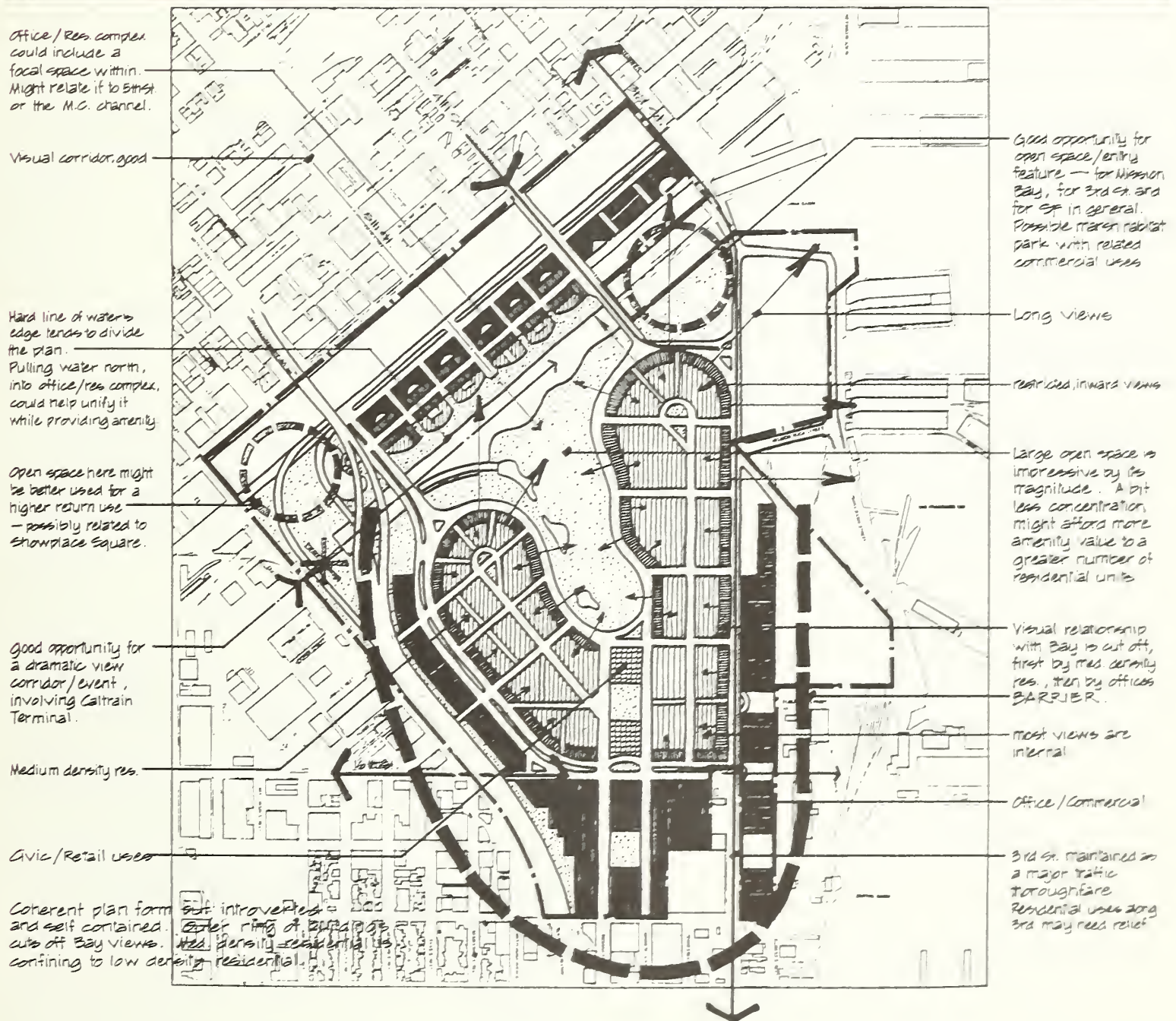
- o Provide for adequate industrial relocation of displaced industries into other San Francisco sites.
- o Do not compete with other single-use or special-use districts.

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2.0 PREVAILING PRINCIPLES AND OBJECTIVES

-
- o Provide for employment opportunities to meet San Francisco residents' skills and abilities.
 - o Maintain viability of existing Port activities. Ensure adjacent proposed uses are compatible with current and future Port activities.

Coalition for San Francisco Neighborhoods

Objectives:

- o Infrastructure costs should be borne by the developer.

Potrero Hill League of Active Neighbors

Objectives:

- o Plan for low infrastructure costs, which are achieved by adhering to the existing street layout; predominantly wood frame construction; standard foundations; and enhancement rather than expansion of the existing waterway.

Potrero Hill Community Development Corporation

Objectives:

- o Require that commercial development provide broad-based economic opportunities for all of the people who reside in the Potrero Hill Neighborhood.
- o Development should provide training and employment opportunities.
- o 100% of all construction jobs for San Francisco residents, with 49% to minorities, 51% to women, and 25% to Potrero Hill residents.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

-
- o Affordable leases should be available for small businesses, with priority to those being dislocated by downtown development, with 49% occupancy for minorities and 25% occupancy guaranteed for women in the retail development.
 - o Construction contracts requirements should include 49% to minorities and 25% to females.
 - o An agreement must be reached between the Project Developer and the community on a program and process to insure minorities and women equity participation in the project. The percentage of equity participation should approximate the percentages of minorities and women in the San Francisco population.
 - o 5% of the gross development cost should be allocated to a community fund to support community programs in the areas of: employment training; education; housing assistance; small business assistance/economic development; and youth.

South of Market Planning Alliance

Principle: Develop a "Neighborhood Protection Plan" which will protect Potrero Hill neighborhoods—both their affordable housing stock and their small businesses.

Objectives:

- o Employment generated should be targeted to city residents.
- o Economic development programs should be incorporated within the Mission Bay project that include voluntary compliance with the Minority Business Enterprise Ordinance in order to benefit San Francisco's small businesses.

2.0 PREVAILING PRINCIPLES AND OBJECTIVES

2.5 Summary

The extensive list of prevailing principles, objectives and policies in this section includes statements that apply either generally or specifically to the Mission Bay site. Many of these will, in all likelihood, become part of the list of principles and objectives that is generated to guide Mission Bay site planning. There are, however, other sources of information that may contribute to the generation of Mission Bay principles and objectives.

Many of the principles and objectives listed represent current positions held by the agencies or groups responsible for these plans; others are statements that are under consideration for change by those agencies and groups. The Port of San Francisco is beginning to reassess the feasibility and desirability of implementing new capital-intensive maritime facilities at Piers 48 through 64. If the Conceptual Plan for those piers is revised, then many of the objectives and policies in the Central Waterfront Plan should be reconsidered.

Also, new City agency policies not directly applying to this site have recently been developed and they may provide some current direction for the Mission Bay planning effort. For example, the recently prepared South of Market Plan which has been distributed for citizen review contains objectives and policies, some of which may have relevance for this site.

Thirdly, observations made about current site conditions, design opportunities and economic factors may suggest new principles and objectives that are not reflected in any existing plan, principles and objectives. All three of these factors and increasing knowledge of the site opportunities will shape the upcoming Mission Bay principles and objectives.

Opportunities and Constraints

3.0 OPPORTUNITIES AND CONSTRAINTS

3.1 Introduction

The 294-acre Mission Bay site represents both (a) significant opportunities for the development and conservation of its resources and (b) serious constraints to both development and conservation on the site. This section seeks to highlight influential opportunities and constraints that will shape the alternative plan solutions that will be considered for the site. The list is not intended to be exhaustive and will be expanded and substantially refined before plan alternatives are completed.

3.2 Physical Design

An opportunity viewed from one perspective is often a constraint when considered from another. The following list of physical design opportunities and constraints attempts to include the possibly conflicting views on each issue. This list is amplified by graphics throughout this section which illustrate the analyses of these physical site opportunities and constraints.

Mission Bay lies within a "bowl" formed by natural hills & the man-made "hills" of downtown & 2 elevated highways, and is focused directly on SF Bay. This evident form & orientation should determine its physical plan.

Mission Bay

San Francisco

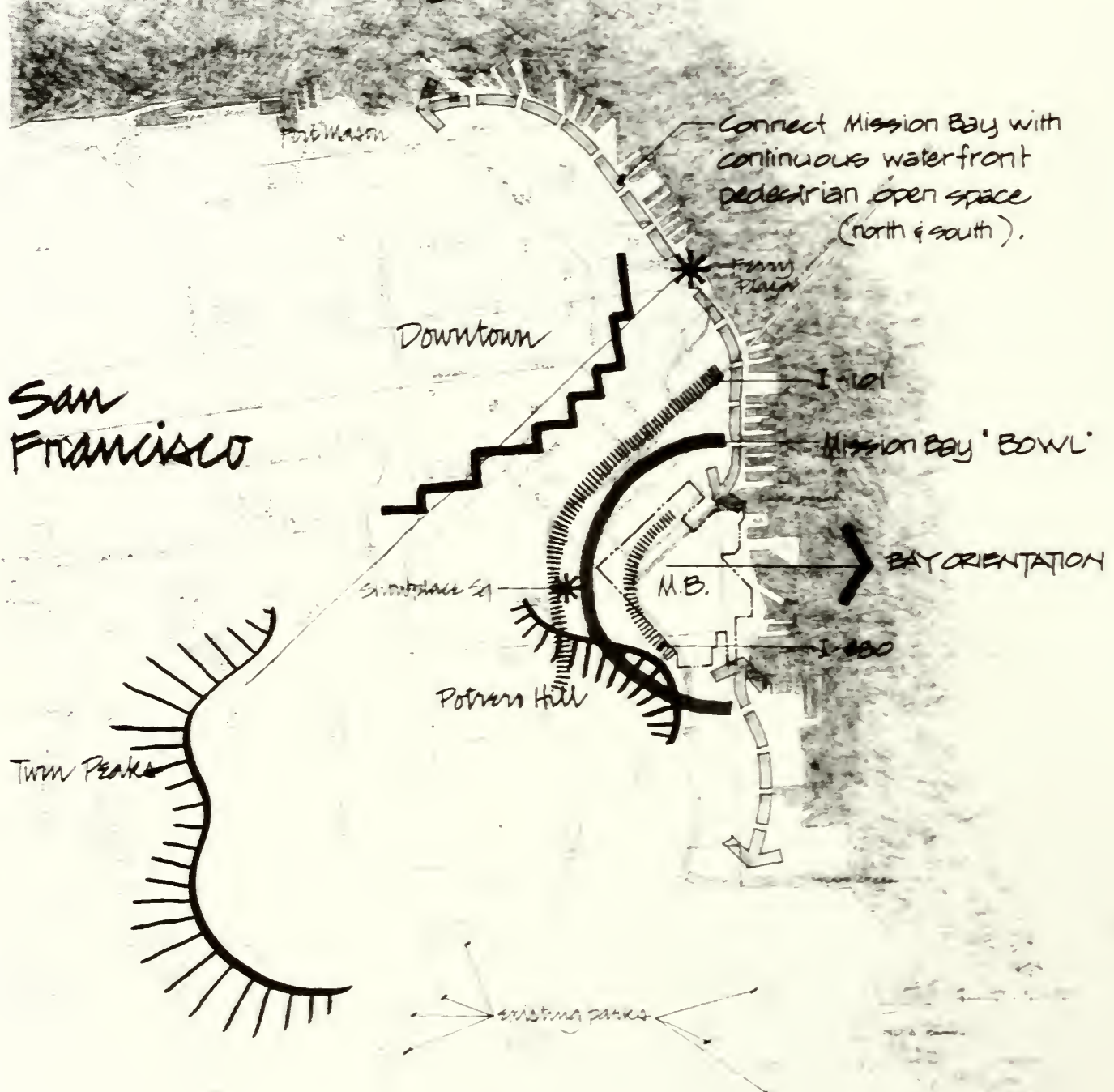
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Philip Williams & Associates
McGuire & Company

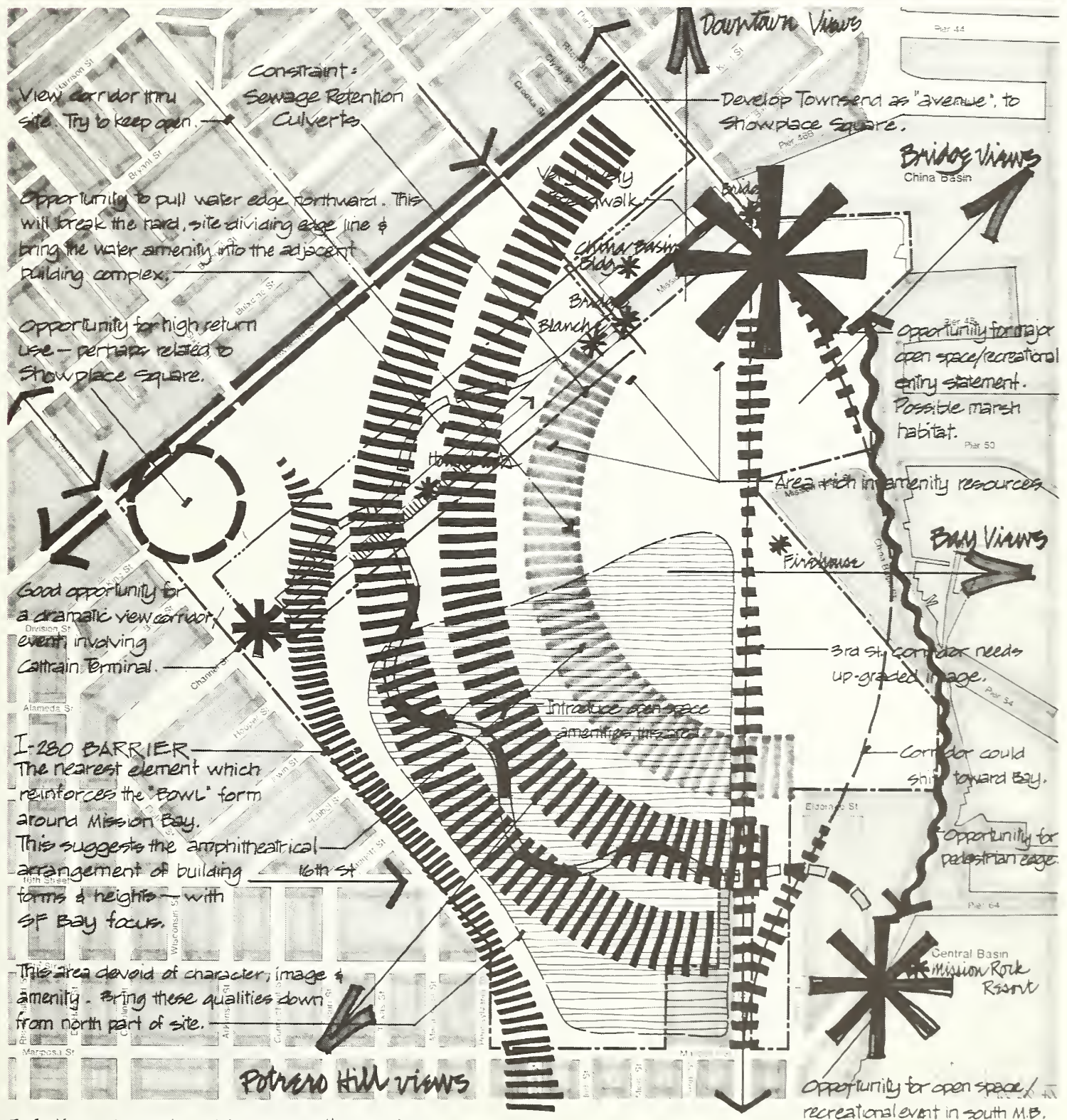
PLAN ORGANIZING ELEMENTS

1. Natural features: topography, Bay, water ...
2. Man-made features: roads, freeways, downtown ...
3. Development Program



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Danadjieva & Koenig Associates
Daniel Solomon and Associates
Gabriel-Roche, Inc.

KwanHenmi Architects
Carl Anthony & Associates
Robert L. Harrison
Philip Williams & Associates
McGuire & Company

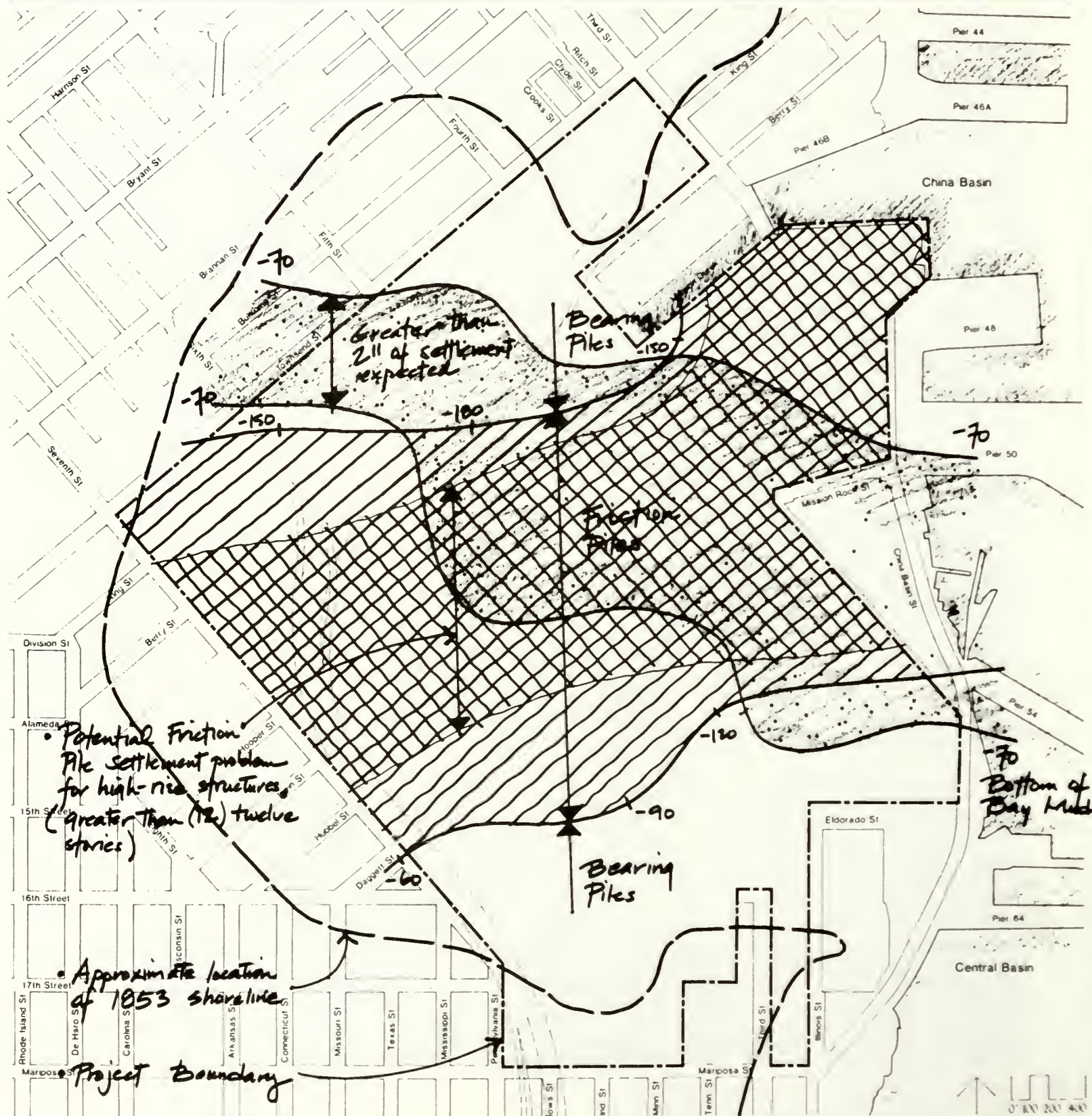


- * Existing elements which presently provide image, character & personality to Mission Bay.

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Carl Anthony & Associates
Robert L. Harrison
Philip Williams & Associates
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3.0 OPPORTUNITIES AND CONSTRAINTS

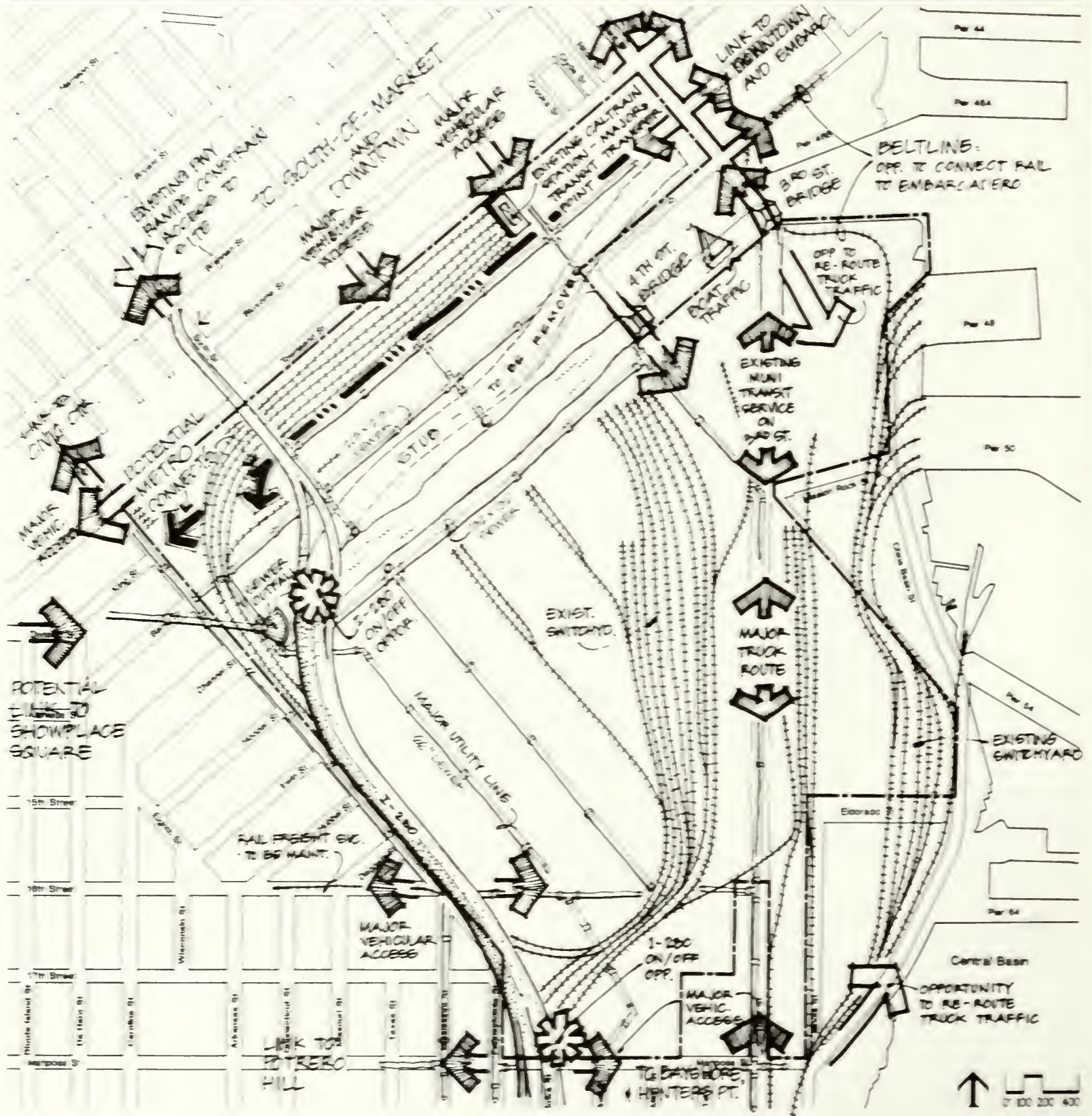
<u>Issue</u>	<u>Opportunity</u>	<u>Constraint</u>
I. Location on tidal shore	a. Housing & other uses can have relationship to water's edge	Tidal edge means +/- 9-foot water level differential: potentially dangerous or unattractive edge
	b. Wetlands wildlife habitat may be created near dense urban environment	Wildlife habitat cannot be widely used by humans or pets; takes large not token area
	c. Houseboat community adds affordable residential variety	Using water's edge for boats and houseboats has economic impact on nearby uses
	d. Maritime activity adjacent to other uses adds richness to the area	Potential expansion of port activity (as in plan for Mission Rock Terminal) would restrict public access to bay, adding traffic and 24-hour lights and activity
	e. Public access to the bay may be increased—an extension of the Embarcadero pedestrian waterfront	Costs associated with construction and maintenance
	f. China Basin Channel is an existing navigable waterway affording boat access inland	Federal restrictions on navigable waterways must be addressed. Permits for changes will be required to increase vehicular crossings in to site
	g. Canals, salt-water ponds may be added to existing waterway system	Water quality problems may be caused by dead-end channels or discontinuous bodies of water; maintenance costs
	h. Views of bay are achievable	New building heights might restrict views

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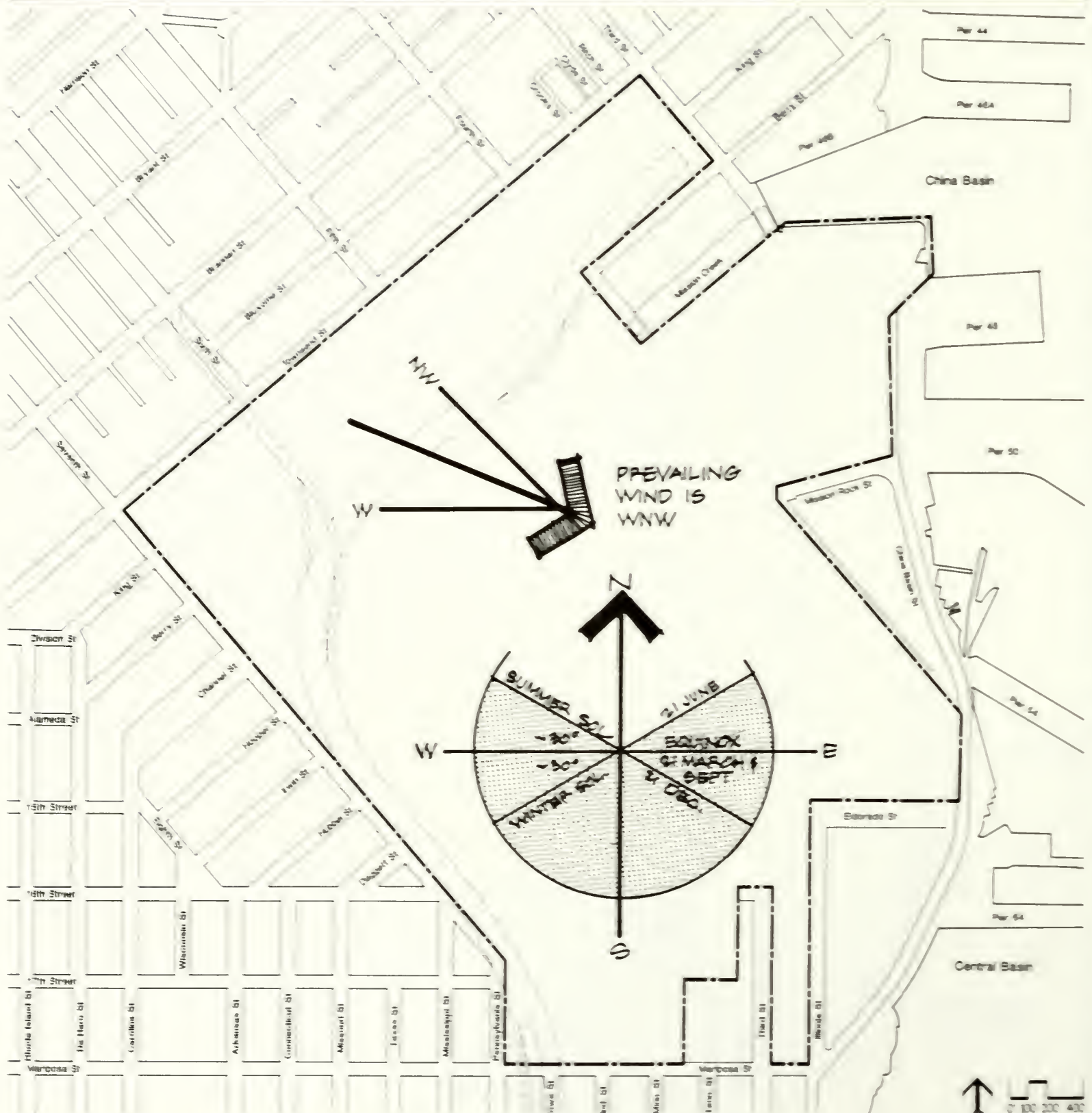
KwanHennis Architects
Carl Anthoni & Associates
Robert L. Harrison
Philip Williams & Associates
McGuire & Company



3.0 OPPORTUNITIES AND CONSTRAINTS

<u>Issue</u>	<u>Opportunity</u>	<u>Constraint</u>
2. Relatively vacant site	h. Site is flat.	Costly depth to bedrock construction and settlement concerns because it is flat
	i. Tidal action may be used to flush continuous water-way system	Existing China Basin Channel water quality must be improved
	j. Unique S.F. opportunity to link development with the Bay	Current maritime plans conflict with passive or active open space and views
	a. Can build in open space rather than having to carve it out of existing development	Minimal existing infrastructure or built environment is available as basis for development Existing wide views will be reduced by buildings
	b. Large, regional open space can be created	Open space uses eliminate those areas for income-producing development
3. Existing Utilities	c. Network of small public open spaces can be interspersed with other uses	
	d. Chance to create new or reiterate old S.F. character; phasing is easy	Risk of area consisting of several "developments"
	a. Site well-supplied with sewer lines which avoids expense of building new primary lines	Sewer layout has cost implications for street layout and water configuration Pumping Station and Sewer Outfall in NW corner of site impact building area

Kings-Hennessy Architects
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3.0 OPPORTUNITIES AND CONSTRAINTS

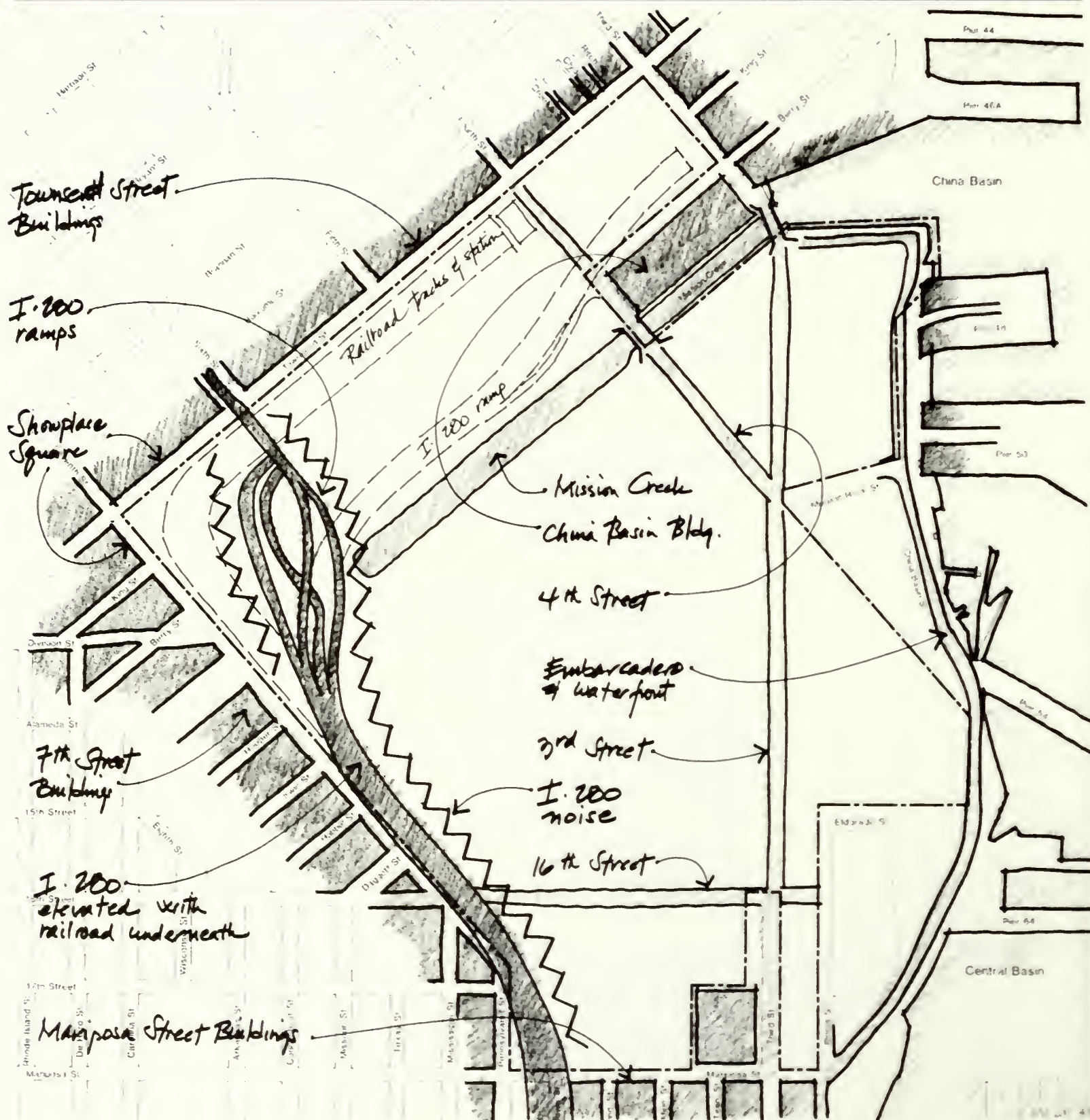
<u>Issue</u>	<u>Opportunity</u>	<u>Constraint</u>
4. Existing Built Environment	a. Firehouse on Third at Mission Creek St. has architectural and historical merit	Preservation and seismic upgrading of the firehouse is likely to be required and perhaps costly
	b. Freeway forms site edge	Freeway character not conducive to residential neighborhood
5. Existing Transportation Network	a. Site is easily reached by auto, commuter train and trucks and for maritime activities	Elevated freeway and railroad tracks form visual and actual barrier; difficult to build underneath; noisy. Links to south of Market and Potrero are inhibited
	b. Third and Fourth Street link to Moscone Center Area is valuable tie towards downtown	I-280 east of Sixth Street is an impediment to development. Sixth and Seventh Street couplet link to Civic Center impeded by I-280 Sixth Street ramps
	c. Tracks under freeway are compatible with freeway structure	CalTrain Station and tracks take up large land area
	d. Muni-Metro proposed through site is an opportunity for "Transit First" development	A single Muni-Metro line will not be able to serve entire site; railline is noisy.
	e. Truck & rail traffic on Third & east of Third is advantageous for port development	Truck & rail traffic through the site create barriers
	f. Potentially easy access to site is advantageous for office and R&D development and for regional park	Perceived or actual easy access will cause more through-site traffic. More buffering will be required.

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<u>Issue</u>	<u>Opportunity</u>	<u>Constraint</u>
	g. Picturesque Third and Fourth Street bridges are functional	Bridges restrict traffic flow; preservation likely to be required
	h. Third, Fourth and 16th Streets connect to areas outside project boundaries	Existing streets restrict future street configurations
	i. Street grids of South of Market and Potrero Hill can be continued into site to make strong connections to areas outside	The meeting of the grids and existing on-site streets can cause awkwardly shaped parcels and hazardous intersections
	j. Proximity to downtown would create quick transit access link	Muni improvements needed
6. Proximity to Showplace Square Development	a. Office and retail development, particularly on NW corner of site, can be integrated with Showplace Square development	There will be an increase in traffic to and from Showplace Square
	b. Division Street is a potential visual and transit corridor between Showplace Square and the site	
7. Proximity to Potrero Hill	a. View to the South is of residential hillside and bay	Mission Bay development could impact views from Potrero Hill
	b. The two residential areas of Potrero Hill and Mission Bay can be linked by extension of Potrero Hill street grid	I-280 and railroad right-of-way are between Potrero Hill and site
	c. Can provide neighborhood retail and community services for both residential communities	

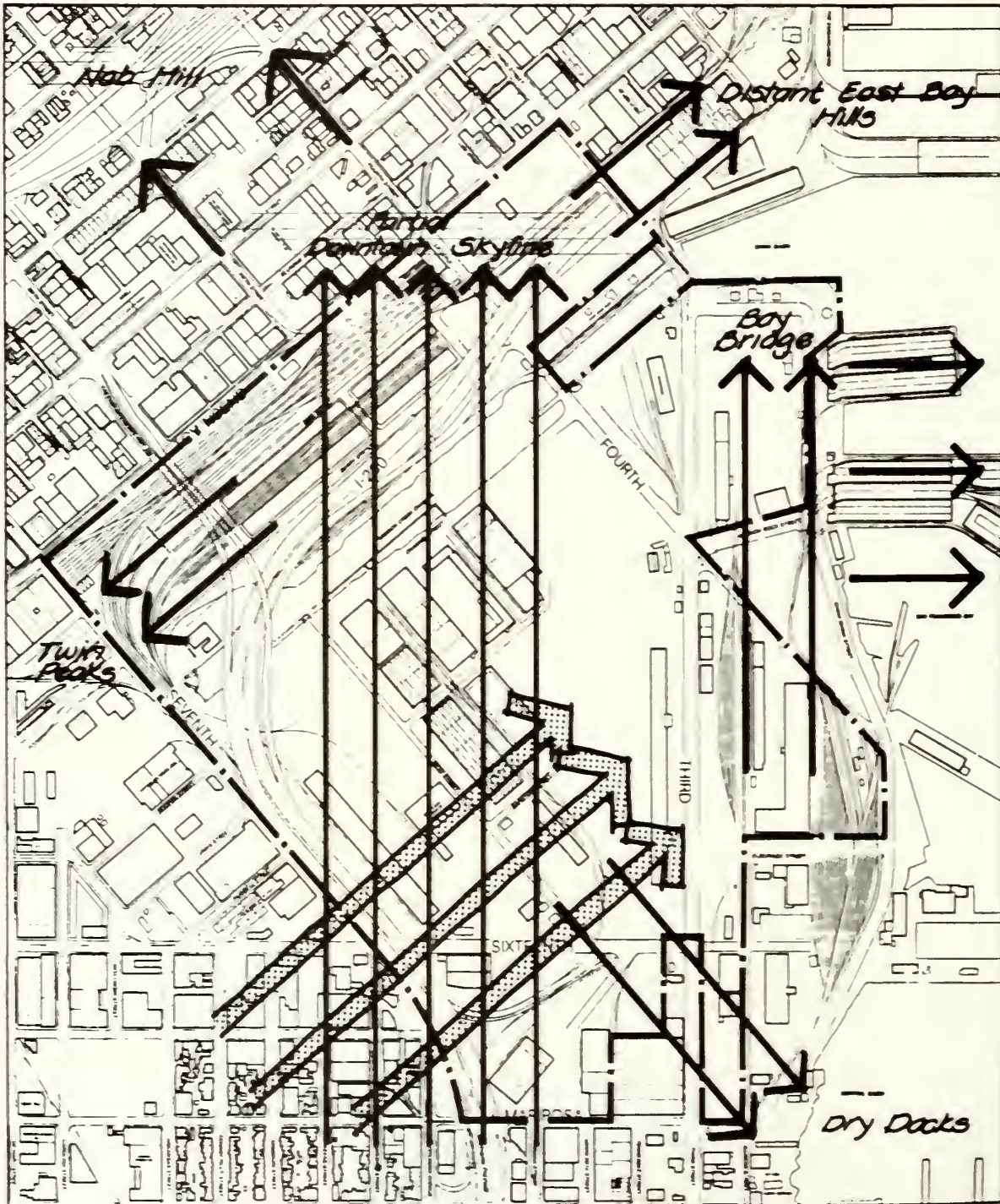
- On-grade Views
- Views from Housing

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Views from Potrero Hill...
Downtown Skyline beyond

3.0 OPPORTUNITIES AND CONSTRAINTS

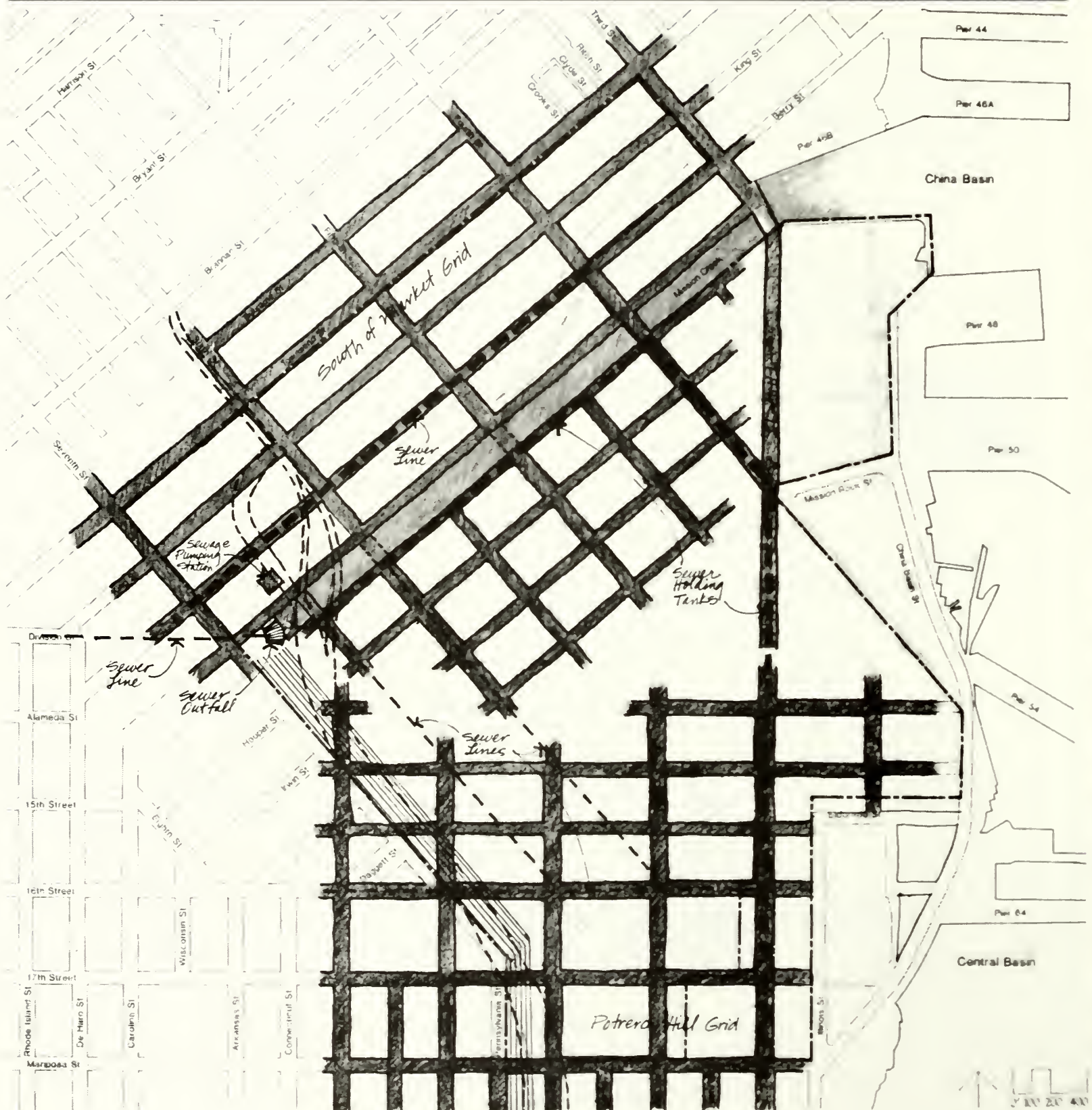
<u>Issue</u>	<u>Opportunity</u>	<u>Constraint</u>
8. Adjacent to South of Market Area & Embarcadero	a. Planned Embarcadero transit and auto corridor feeds site--advantageous for retail development	Traffic from Downtown along the Embarcadero will enter I-280 on northern part of site necessitating new on- and off-ramps and creating more through-site traffic
	b. South of Market uses compatible with office, retail and R&D development on this site; transition is feasible in early phases	Area directly adjacent to South of Market is not ideal for housing
9. Proximity to Downtown San Francisco	a. Views of downtown skyline orient the site	Property values increase with views
	b. Site is convenient location for secondary office and housing for office workers	
10. History of Bay	a. Site has colorful history, place-making names and characteristics	Geotechnical problems are caused by deep bay mud and fill which are not good for economical foundations
11. Solar Orientation	a. Entire site is well-exposed to sun until mid-afternoon	Western edge is shaded by freeway in late afternoon
12. Views from Site	a. View corridors to downtown skyline, Bay Bridge, Twin Peaks & Waterfront activity can orient inhabitants and visitors	Buildings on the flat site restrict views to those at ends of streets & from upper floors of higher buildings
	b. Panoramic views possible from higher buildings	

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3.0 OPPORTUNITIES AND CONSTRAINTS

3.3 Land Use Opportunities

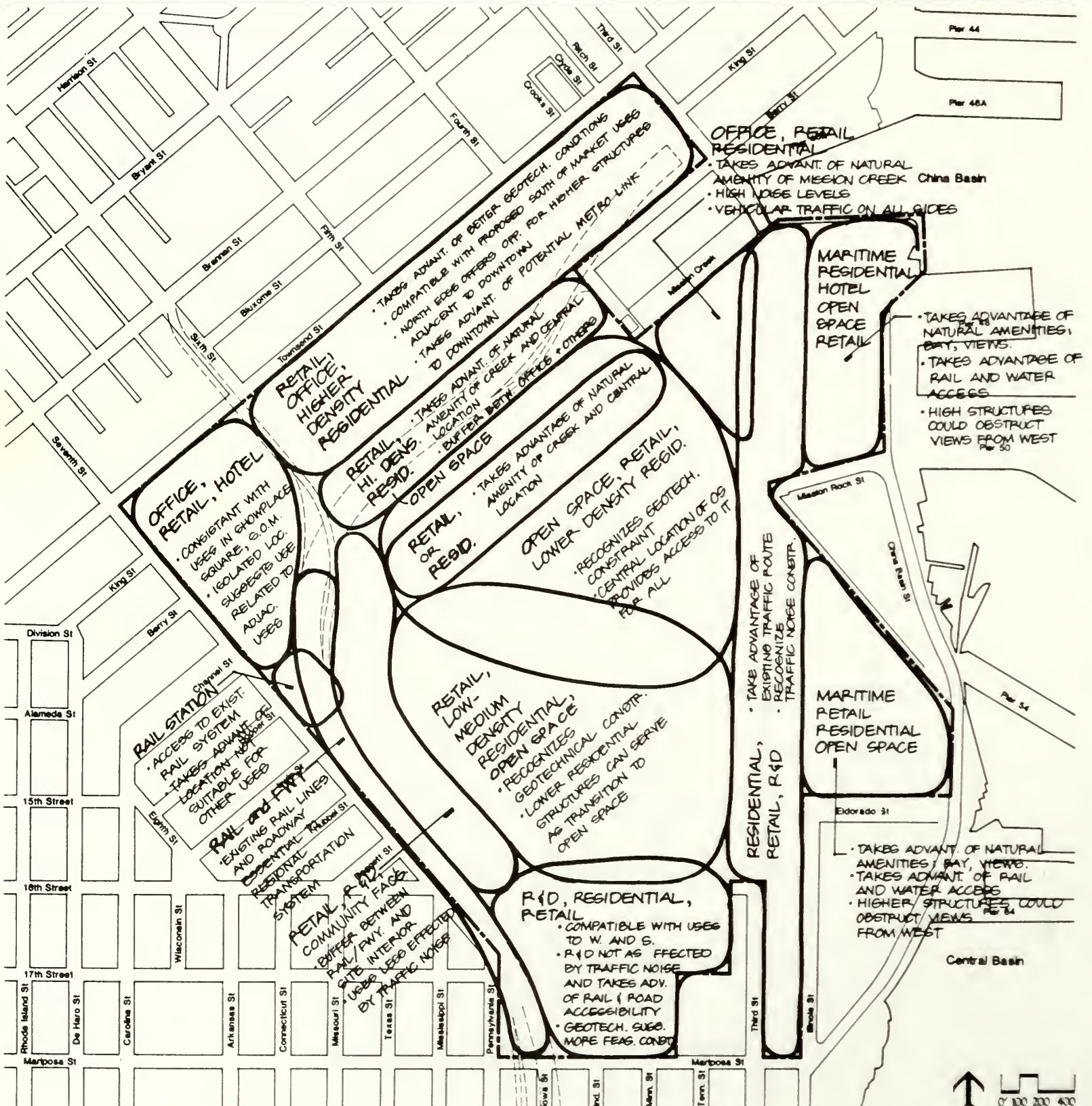
This section contains one map which suggests what land uses may be most suitable for each area of the Mission Bay site. In each area we have identified the several most appropriate land uses based on existing conditions, prevailing principles and objectives and the analysis of opportunities and constraints. This map represents the preliminary thoughts of the Mission Bay Planning Team and will be evaluated by the Department of City Planning. Further close examination of the character of each area, the relationships that could be achieved between various uses in the areas and overall design concepts for the entire site in its setting will be conducted.

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3.0 OPPORTUNITIES AND CONSTRAINTS

3.4 Housing Opportunities and Constraints

3.4.1 Introduction

As preservation of San Francisco's neighborhoods has become an increasing concern in the city, the physical characteristics that establish the character of the city's neighborhoods have been identified and well documented. It has become apparent that there are fundamental and necessary differences between the nineteenth century housing patterns which San Franciscans seem universally to admire and housing production in the 1980s.

In order to describe the opportunities and constraints associated with developing a San Francisco neighborhood on the site in the next twenty years, the following sections examine precedents in San Francisco housing types and neighborhoods, and establish methods which will help to determine how the essential characteristics of San Francisco urbanism can be recreated within the special conditions of the Mission Bay site.

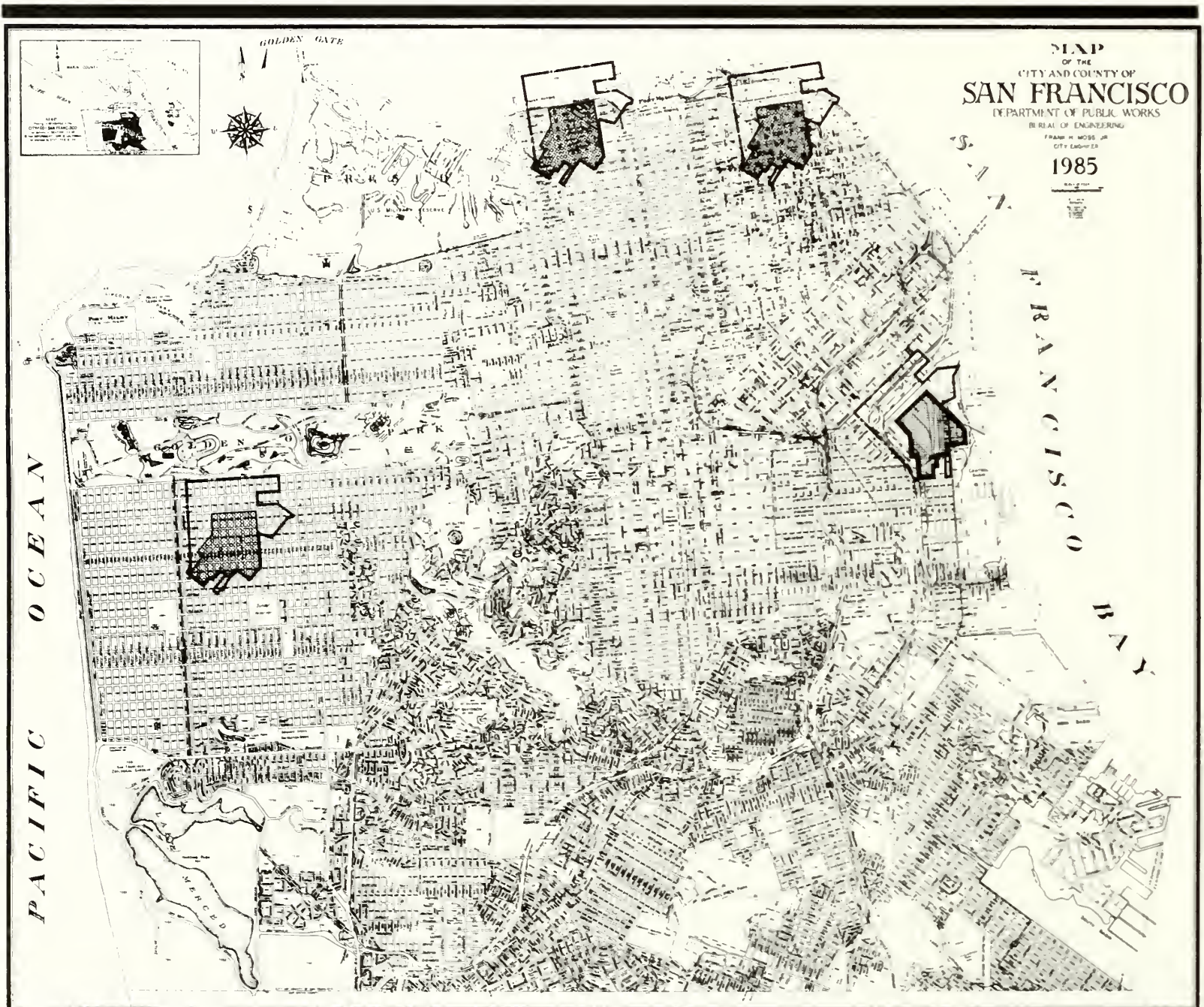
3.4.2 How Large is Mission Bay

An important first step in determining the feasibility of creating a neighborhood structure for Mission Bay is understanding its size in relation to other San Francisco neighborhoods. The accompanying drawing (Figure 30) shows the Mission Bay site imposed upon some other locations in the city. In each case the outer line represents the entire Mission Bay site. The toned area represents ninety (90) acres which is about the area anticipated for housing in the Mayor's Letter (October 16, 1984). Assuming 90 acres as the basic residential neighborhood the map shows that this area constitutes roughly 2/3 of the Marina, or 1/2 of North Beach, with the northern boundary of new neighborhood along China Basin Channel corresponding to the four blocks from Grant Avenue to Taylor St. Imposed on the Sunset District the new neighborhood occupies the area from 12th Avenue to 18th Avenue and from Judah Street to Noriega. The conclusions to be drawn from this comparison are (1) that the new neighborhood is a

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3.0 OPPORTUNITIES AND CONSTRAINTS

compact, pedestrian scaled segment of the city, much larger than most individual projects, but significantly smaller than many of the city's neighborhoods and (2) that a relatively simple and consistent pattern of development, rather than a complex or variegated pattern for the neighborhood, would be consistent with the character of other neighborhoods.

3.4.3 The Structure of San Francisco Neighborhoods

It is important to understand the factors which gave form to San Francisco and how conditions which produced our particular quality of urbanism have changed. A soon-to-be-released book entitled Built for Change: Urban Architecture in San Francisco by Professor Anne Vernez-Moudon of the University of Washington illustrates how the residential character of San Francisco has evolved as a result of the interaction of three factors: (1) a method of land division, (2) a particular scale and organization of enterprise that produced most of San Francisco's housing, and (3) the city's topography.

San Francisco is a planned city. An extremely simple and uniform pattern of land ownership and subdivision permanently and profoundly gave shape to the city. Blocks and streets in San Francisco were originally laid out in 1837 by Swiss engineer Jean Jacques Vioget, who applied a rigid ideal city pattern in "varas", a Spanish colonial system of measurement. The blocks north of Market Street measure 100 by 150 varas (or 275'0" by 412'6"), with the longer dimension of the block running in the east-west direction. Today these streets constitute the principal axis of the city to and from the downtown area and the main circulation streets (also of 25 varas in both directions) which run east-west. With the explosion of the Gold Rush in 1849 and 1850, a few city officials had the difficult task of controlling over-eager speculators and settlers. Early surveys suggest that blocks were initially subdivided into large parcels of 50 by 50 varas (137'6"). As land speculation increased in the 1860 and 1870's, these parcels were further subdivided into 5 lot widths of 10 varas (approximately 25'0"), which formed the basis for the standard San Francisco two-room-wide house.

3.0 OPPORTUNITIES AND CONSTRAINTS

The second factor in the structure of San Francisco was the proliferation of small scale builder/entrepreneurs. They were forced to operate within the constraints of the vara grid with a standard, more or less mass produced, balloon-frame box house. From 1873 on, the larger blocks south of Market Street began to be subdivided by service alleys in an attempt to improve access to the increasingly dense industrial areas. Small scale land speculators soon adapted this pattern by buying blocks and subdividing them to create half-blocks typically separated by 35-foot wide alleys. A total of 365 blocks in San Francisco were subdivided by alleys. This subdivision resulted in an increase in linear street footage, an increase in density and shallow lots. In addition, tandem houses, which many settlers initially built as small residences on the back of lots in expectation of a larger front house, began to be built to increase density and maximize revenue. The lot and block pattern of much of the city, then, is the record of the inventiveness of small scale enterprise operating within a rigid system of land division.

The balloon-frame box which is the basic shell of the Victorian house also provided a unifying framework within which this army of small-scale builders could assert their individuality. Through an effulgence of articulation, ornamentation, and coloring of the facade, the mass of the basic box facade was broken down to lend individuality and variety to each building. This was facilitated by a growing industry that delivered standard and uniform building products, which property owners and speculators quickly began to arrange in a personalized manner.

3.0 OPPORTUNITIES AND CONSTRAINTS

The third factor in San Francisco's residential form is the city's topography and the absolute contradiction between the rational vara grid and the city's hills. The vara land subdivision system is most appropriate on relatively flat terrain or soft, rolling hills. Where the grid has clashed with the steep slopes, many streets have terminated as stairways or retaining walls. These collisions between street and land have created many memorable places within the city's fabric. Residents in these areas have appreciated living near streets where traffic is limited and small green parks or public stairs take the place of streets. Additional characteristics created by the topography stem from the fact that all of the buildings were three stories or less and confined to narrow lots. Therefore, they stepped up and down with the slope at regular, small intervals. An entrance porch or stoop became a common transitional element occurring at regular 10 vara intervals. When combined, these undulating public facades, steps and entrances gave typical streetscapes a busy, fine-grain pattern. The stepping of 25' lots or 2 room wide buildings along steep streets is the most characteristic image of San Francisco and the basis of the scale of the city.

None of these three factors which shaped other San Francisco neighborhoods is present in Mission Bay. There is now no neighborhood-scaled street grid in Mission Bay. There is no ruthlessly simplistic pattern of small subdivision. There is no army of small entrepreneur/builders struggling to assert their individuality within the restrictions of uniform methods of land division and building production. And the land is flat. There will be no charming incidents where grid meets cliff and no steep streets of buildings that step every other bay window.

In addition to the absence of these three basic factors, a series of new concerns that will affect housing patterns and neighborhood structure now exist. These factors are:

3.0 OPPORTUNITIES AND CONSTRAINTS

- (1) Access by and accommodation for the automobile. From the 1940's onwards the garage base replaced the traditional entrance porch and stairs for the single family row house. As a result some recent projects, particularly those built prior to residential rezoning in 1978, do not have traditional San Francisco street character because of the method in which they accommodate automobiles.
- (2) The scale of finance and development and the possibilities of large buildings and large phases of construction.
- (3) Fire codes have become more restrictive and constraining for housing design.
- (4) Living standards including daylight for dwellings, open space, relationships of indoors to out, the disappearance of the servant and the wife/servant from the domestic scene, and the emergence of the small household.
- (5) The need for security for residents of urban dwellings.

Amongst San Francisco's newer housing there are projects shaped by these contemporary concerns that contain some areas of conspicuous failure both in economic and urban design terms. The following section on existing housing typologies contains analysis of several projects with features that Mission Bay should not repeat.

3.0 OPPORTUNITIES AND CONSTRAINTS

Some specific lessons are clear. A housing type with ground floor units constructed at the pioneering first phase of the conversion of new residential land to residential use requires extraordinary security measures. At Telegraph Landing on the northern waterfront, the security measure took the form of a continuous perimeter wall, effectively preventing the project from ever becoming assimilated into the neighborhood and supporting street life in the way that San Francisco housing traditionally has. Across the street at 101 Lombard, developers and architects attempted to redress this deficiency. Commercial space facing Sansome Street is laudable but ground floor, north facing, single aspect units along Lombard Street fail to achieve the character of San Francisco row houses and have had little market acceptance.

There is much to be learned from recent large projects like Telegraph Landing and also from recent in-fill housing in existing neighborhoods. Numerous in-fill projects show that despite the many new conditions that surround the construction of housing, San Francisco's old neighborhoods sustain modern life with a special grace, and however obsolete the factors which gave shape to them may be, they remain the object of universal affection. In addition, San Francisco's developers and architects of in-fill housing have shown that old patterns are not so rigid that marketable, habitable and profitable new housing cannot be made to fit within them.

All of the recent housing types which were analyzed were created under conditions which are more like those at Mission Bay than are the four traditional neighborhood types in the study. All of the recent housing types were built on aggregations of land larger than than 25-foot subdivided lots which form the structure of each of the traditional neighborhoods. These large parcels permit parking, building entrances and circulation to be aggregated into large collective organizations.

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From the analysis, it becomes apparent that the aggregation of parking in and of itself does not necessarily disrupt the active pedestrian-oriented character of streets. In fact, aggregated parking limits curb-cut and garage doors and benefits street life. Under requirements of the pre-1984 San Francisco Building Code, there was a severe cost penalty for large parking aggregations, particularly in the soils conditions of Mission Bay which require pile foundations for concrete parking garages. Code changes now permit aggregated parking to be wood frame with less expensive foundations. Large wood-frame parking garages are appropriate for Mission Bay as the cost index figures for parking and foundations for Projects 5, 6 and 7 in the report clearly show.

Aggregations of entries and circulation do not have the same benefit as aggregated parking and have severe drawbacks. The more circulation is aggregated, the more blank and lifeless the quality of street facades. Low rise projects with few entries and long corridors have a relatively high cost index for circulation. Thus, North Point Apartments, which has the poorest street quality of any of the projects, also has a poor cost index compared to other projects of similar density. The implication for Mission Bay from this analysis is that for reasons of cost, density, livability and urban design quality, a combination of aggregated wood-frame parking and disaggregated walk-up entrances with minimal corridors and no elevators appears to be the most appropriate direction to pursue.

The analysis also provides examples of good and bad solutions to security, public access, quality of open space and street frontage in mid-rise projects that will serve to generate design standards for Mission Bay in the coming phases.

3.4.4 The Housing Density Dilemma

There are two conflicting goals for Mission Bay housing; the first is to maximize the amount of housing developed in the Mission Bay project; and the second, to maximize the number of units that are "affordable."

3.0 OPPORTUNITIES AND CONSTRAINTS

Construction costs increase rather dramatically with density. This is particularly true in Mission Bay where soils conditions impose the significant cost of deep pile foundations at the point that density mandates concrete parking garages. The sections of the Findings Report dealing with existing housing typologies and cost indexing document this phenomenon.

If the value attributed to land is relatively low, housing density is inversely related to cost. The more dense housing is, the more expensive it will be to produce. It would certainly be possible to create a plan for Mission Bay with a vast number of housing units, but such a plan might impose costs that would insure a rate of demand and development so low that Mission Bay would not provide a significant housing resource for the city for generations to come.

As land value increases, the cost effective density for housing considering the combination of construction cost and land cost increases. While the amount of subsidy required per unit of affordable housing increases, the increased density of the housing permits more land to be used for profitable uses that can help provide housing subsidy. The Office Affordable Housing Production Program (OAHPP) has established the principle of office uses subsidizing housing supply. This principle can be applied to the Mission Bay project. The office, Research and Development and retail elements of the project, and market rate housing to a lesser degree, can support the infrastructure costs and internally allow for the cross subsidy required to support affordable housing.

The balancing of these competing factors will require economic modelling of considerable sophistication. This section of the Findings Report dealing with housing topologies and cost indexing is intended to provide information and a conceptual framework to help address these difficult questions.

3.0 OPPORTUNITIES AND CONSTRAINTS

3.4.5 Housing Typology Cost Index

Analysis of the construction costs of many types of housing of widely varying densities can help to build understanding of the relationship between housing affordability and housing density at Mission Bay. Traditional San Francisco neighborhood housing types as well as recent housing developments within the city represent a wide range of housing densities, construction methods and configuration. To compare the costs of these projects on an equal basis, the construction cost of each housing type is analyzed in the accompanying housing typologies report as if it had been built during 1985 with the foundations required at the Mission Bay site. In addition, the net housing area of each project is divided into standardized units of 850 square feet with two bedrooms and two baths. Housing typologies proposed previously for Mission Bay are analyzed in the same fashion.

The goal of the cost analysis is the development of a construction cost index which indicates for each housing type a relative cost per housing unit (for sales or rent). The accompanying graph illustrates the relationship between housing density per acre and construction cost per housing unit. The graph shows that there are sudden great increases in costs per unit at particular points of density per acre. For instance, beyond a certain point of density per acre one can no longer use wood-frame construction. Since wood framing is substantially less costly than steel and concrete framing, at the higher densities, framing costs per unit will be higher.

The primary elements analyzed here which affect housing construction costs include foundations; parking; framing; and circulation.

- (1) **Type of foundations.** At Mission Bay, the soil is generally low bearing capacity Bay Mud. As housing density and building heights increase, the required foundations for buildings on these poor soils change from relatively inexpensive grade beams to mat and raft foundations to costly pile foundations.

3.0 OPPORTUNITIES AND CONSTRAINTS

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- (2) **Type of parking.** Parking could be, in order of increasing cost, either open or grade; in wood-framed garages; or in concrete garages. Four-story buildings may have either wood or concrete garages. Buildings higher than four stories must have concrete garages.
 - (3) **Type of structural framing.** Wood-frame construction is least costly and may be used in four-story structures or in five-story structures consisting of four wood-frame stories above a one-story concrete garage. Beyond that height, steel and concrete construction must be used.
 - (4) **Circulation—Stairways and elevators and corridors.** The number and type of stairways and elevators and amount of corridor per unit is an important cost element. Stairways may be individual, shared, or aggregated, open, enclosed, or may be in smoke towers. Four-story buildings may or may not have elevators. Five-story and taller buildings always have elevators. In buildings higher than five stories, traction elevators rather than the less costly hydraulic elevators must be used.

For each housing type, the cost per unit of each of these four building elements is determined. The sum of the costs of these four elements is the total cost per housing unit of that housing type. That figure is directly comparable to the total costs per unit figures of the other housing typologies.

The construction cost index is obtained by expressing the total cost per unit of the most expensive housing type as 1.0 and the other housing types' total cost figures as fractions of 1.0.

3.0 OPPORTUNITIES AND CONSTRAINTS

3.4.6 Existing Housing Typologies

The accompanying housing typologies report includes an analysis of existing housing typologies in San Francisco. The report is divided into three sections dealing respectively with historical prototypes, recent low-rise housing and recent mid-rise housing and mixed-use projects. There has been no attempt to make this a comprehensive list of San Francisco housing types. The particular examples have been selected for their relevance to Mission Bay and for the availability of information about them. This analysis provides a comparative measure of familiar prototypes with respect to density, relative cost, urban design quality and livability. Through the application of a cost index, it shows which housing types would be most cost effective with respect to density if they were replicated in the soils conditions of Mission Bay. The report shows examples of recent housing that accommodates parking and security in ways that are compatible with traditional San Francisco neighborhoods and examples that do not.

Some of the low-rise prototypes score best with respect to density, cost, livability and neighborhood quality. Other low-rise prototypes receive poor marks on all counts. Elevator efficiency, parking and foundation costs are critical factors in cost effectiveness. Design of the base of buildings and entry patterns are key elements with regard to neighborhood quality. Circulation, the nature of security provisions and the handling of fire separations are important components of livability and appear to effect the success of various dwelling types in the marketplace.

3.4.7 Previous Plans

The housing elements of three previous plans for Mission Bay are summarized on the following pages. Two of these plans were put forth by local citizens groups and the third plan was prepared by I. M. Pei & Partners for Santa Fe Pacific Realty Corporation in conformance with the Mayor's Letter (October 1984).

3.0 OPPORTUNITIES AND CONSTRAINTS

Seven thousand six hundred housing units are provided in the Pei plan at an average density of 90 units per acre. The Pei plan attempts to create dwellings similar to traditional San Francisco housing types at block perimeters. Concrete mid-rise housing is built in the interiors of blocks. There is no attempt to extend throughout the site the traditional San Francisco grid base on the vara.

Partly in reaction to the Pei plan, two citizens groups created their own plans. The Potrero Hill League of Active Neighbors' Plan goal is the creation of a new San Francisco neighborhood similar to the Marina. Six thousand five hundred housing units would be provided in mostly wood-frame construction with as low infrastructure costs as possible. The surrounding neighborhood block patterns extend into the site.

Another citizens group, San Francisco Tomorrow, has issued "Mission Bay Gardens", a plan containing 9,266 units of housing at an average density of about 150 units per acre. Average building height is six stories with 75 percent lot coverage over a very large parking podium which extends under streets. The Mission Creek Park Plan called for comparable housing adjacent to a large park.

All of these previous plans generate serious questions about the issues of housing affordability and the phasing of housing construction. None of them are accompanied by the detailed discussion of the relationship between housing density and housing cost. Although each has been the subject of some economic analysis, much work remains to be done in the current planning effort on the interrelated issues of neighborhood character, construction cost and the financial feasibility and affordability of the various possible configurations of housing.

3.0 OPPORTUNITIES AND CONSTRAINTS

3.5 Community Services and Facilities

This section presents an outline of the opportunities available for Mission Bay in order to respond to the need for community services. It also outlines the constraints imposed by the need for community services.

3.5.1 Opportunities

Opportunities to meet city-wide needs and the needs of adjacent neighborhoods.

- o Need for major open space.
- o Need for such public facilities as a middle school, fire station, police station or branch library.
- o Arts facilities/performing arts rehearsal space/live work housing.
- o A church could be a desirable Mission Bay land use.

Opportunities for cooperation among city departments, to create a major new focal point for community services within the new development.

Opportunity for the public sector to influence private development through judicious investment in community facilities.

Opportunity to meet emerging community needs through state of the art planning. Examples: a) The Public Health Department is expanding its program to address a variety of environmental hazards; and b) The Downtown Plan provides a new set of standards for incorporating child-care facilities in the work place environment.

3.0 OPPORTUNITIES AND CONSTRAINTS

An effective, well thought out community facilities plan can have a disproportionately positive effect on:

- o Public acceptance of the Mission Bay Plan.
- o Marketing office space and housing.

3.5.2 Constraints

If the development includes a major regional or city-wide recreational open space, the costs for operating it and maintaining it could be substantial. Fiscal constraints are particularly severe since the passage of Proposition 13.

To the extent that under-utilized community services exist outside the development area, these should not be duplicated within the development.

There may be a small homeless population occupying vacant buildings and other area on the site. Development may displace this group and require public or private action to mitigate hardship.

The costs and space needs for community services may reduce the available private and public resources for affordable housing, infrastructure or open space.

Excessive costs for community services attached to the production of secondary office space may drive the leasing costs above the market it seeks to attract.

3.6 Public Health and Safety

In land use planning, the factors usually identified with the public interest are nine: health, safety, convenience, efficiency, energy conservation, environmental quality, social equity, social choice, and amenity.

3.0 OPPORTUNITIES AND CONSTRAINTS

Although they may be considered as separate public purposes, health and safety are frequently involved in combination and thus are customarily linked together. Regulatory measures such as health, sanitation, housing, and building codes provide the principal operating definitions of this aspect of the public interest. Such codes place a strong emphasis on constraints to prevent or directives to ameliorate conditions injurious or hazardous to the physical well-being of the people of the community. Contemporary thinking centers more on what is optimum or desirable than what is minimum or adequate in the interest of health and safety. The following list of criteria is considered by the Committee on the Hygiene of Housing of the American Public Health Association to be a test of an "adequate" environment.

- o Protection against accident hazards.
- o Protection against contagion and provisions for maintenance of cleanliness.
- o Provision of adequate daylight, sunshine and ventilation.
- o Protection against excessive noise.
- o Protection against atmospheric pollution.
- o Protection from fatigue and provision of adequate privacy.
- o Provision of opportunities for normal family and community life, and protection against moral hazard.
- o Provision of possibilities for reasonable aesthetic satisfaction.

3.0 OPPORTUNITIES AND CONSTRAINTS

This section documents the opportunities and constraints of the prospect for development on the Mission Bay site against each of the above eight public health and safety conditions.

3.6.1 Protection Against Accident Hazards

This includes geologic and fire concerns, including emergency services during a disaster.

Opportunities

The single overall ownership of the site and new construction entailed will permit 'state of the art' design for structural engineering and building safety systems. It will also permit unified earthquake preparedness planning, which could make Mission Bay a model for the entire state.

There is the opportunity to plan for adequate fire protection, including the possibility of re-establishing the existing, but not currently functional, fire station at 1300 Fourth Street.

An opportunity exists to plan for and construct another route across the channel. A permanent roadway would be preferable to another bridge.

Inclusion of a Mass Care Facility (as part of another facility such as a school) as part of the Community Services plan for the site would insure care of both residents and workers in an emergency.

Constraints

San Francisco's historic vulnerability to great earthquakes is well known. Mission Bay's particular risk as filled marshland and bay is an inescapable consideration in its planning. The Community Safety Element of the San Francisco Comprehensive Plan documents the potential dangers of the Mission Bay site.

3.0 OPPORTUNITIES AND CONSTRAINTS

The accompanying map (Figure 31) shows the distribution of the various apparent intensity zones/grades developed by H.O. Wood following the 1906 earthquake.

The estimated intensity for ground shaking is violent north of the channel east of Fifth Street, and the entire site is in the danger of very strong ground shaking. The site is also shown as a special geologic study area with potential for both ground failure and inundation hazards.

In violent areas, there was fairly general collapse of brick and frame structures, serious cracking of better buildings, lateral displacement of streets, wavelike folds in paved and asphalt-coated streets, bending of streetcar rails and ground fissuring and breaking of sewers and water mains. Very strong ground shaking caused badly cracked masonry and occasional collapse of both masonry and frame buildings.

Both Third Street and Fourth Street bridges are considered vulnerable in the event of a serious earthquake. Damage or total collapse of the bridges would leave the site isolated from emergency services and prevent evacuation of both residents and workers.

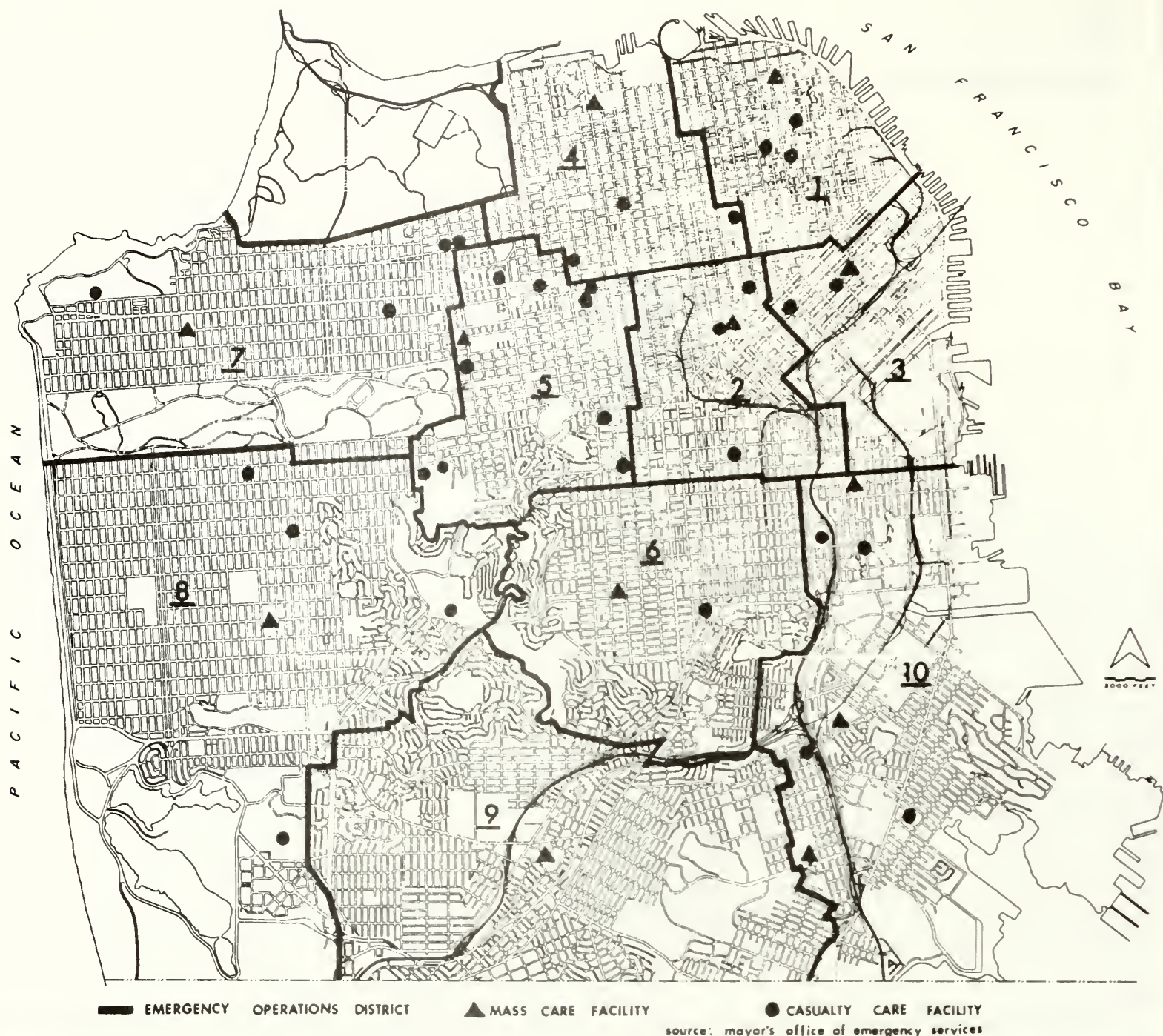
The existing Mass Care Facility designated by the San Francisco Office of Emergency Services, to be used by Mission Bay residents is located north of the channel and could not be reached without an alternative route across the channel (Figure 32).

These conditions will require additional consideration and/or cost in building design and structural engineering, as well as fire response time, and emergency evacuation planning.

ESTIMATED INTENSITY OF FUTURE GROUND SHAKING



Figure 31



EMERGENCY OPERATIONS DISTRICTS AND FACILITIES

City & County of San Francisco Earthquake Response Plan

CENTERS FOR CASUALTY CARE AND MASS CARE BY DISTRICT

MASS CARE FACILITY A location such as a school, from which lodging, feeding, clothing, registration, welfare inquiry, first-aid and essential social services can be provided to disaster victims during the immediate post-disaster period. Operated by the Red Cross, Department of Social Services, School District, Park and Recreational Department, University of San Francisco and Salvation Army.

CASUALTY CARE FACILITY May be either a Hospital with full capabilities for surgery, X-ray, laboratory, etc. for treating major injuries or it may be a First Aid Station with lesser capabilities for treating less severe injuries. These facilities are comprised of both private and public agencies.

3.0 OPPORTUNITIES AND CONSTRAINTS

3.6.2 Protection Against Contagion and Provisions For Maintenance of Cleanliness

Water Quality and Circulation Constraints

There is a sewage overflow problem in th winter and stagnant water in the summer in the China Basin Channel. When the water stops moving, suspended solids settle to the bottom.

Opportunities

An opportunity exists to eliminate the current sewage outfall as part of the development process and to plan and design the water element in such a way as to promote tidal flushing, and avoid channel configurations that may create stagnant water zones or poor circulation.

3.6.3 Provision of Adequate Daylight, Sunlight and Ventilation

There are no current constraints to a development which promotes adequate daylight, sunshine and ventilation. The site offers and opportunity to take advantage of the natural good weather and close proximity to the Bay.

3.6.4 Protection Against Excessive Noise and Protection Against Atmospheric Pollution

Opportunities

The I-280 transfer study recommends removing the 280 freeway ramps crossing the Mission Bay site along Berry Street. This, and the replacement of the off-ramps as part of the transportation planning for the project can diminish noise problems.

3.0 OPPORTUNITIES AND CONSTRAINTS

New construction allows the developer to plan a residential community which includes buffers from noise and potential pollution.

Constraints

Two freeway overpasses run along the perimeter of the site, as do the CalTrain tracks and station. Third Street is a major truck route. All three cause traffic noise and the possibility of atmospheric pollution.

3.6.5 Protection From Fatigue And Provision For Adequate Privacy; Provision Of Opportunities For Normal Family And Community Life, And Protection Against Moral Hazard; Provisions Of Possibilities For Reasonable Aesthetic Satisfaction

The site offers no constraints, but offers the opportunity to plan for public and private open space, for a safe and aesthetic residential community, and the necessary public protection to provide for a quality life.

3.7 Socioeconomics

3.7.1 Economic Model

This section provides an outline of the economic model to be used to evaluate the Mission Bay plan alternatives. Each plan should, of course, be "feasible" from an economic point of view. Using the model provides us with an opportunity to learn more about whether a plan is feasible. The constraint, however, is that the model is imperfect. A number of important technical factors, such as interest rates, must remain assumptions, and the particular financial situation of the land owners cannot be ascertained. (See prior paper concerning Project Feasibility for more information on this latter point.)

3.0 OPPORTUNITIES AND CONSTRAINTS

The model has the following features which are listed below and then are more fully described. A draft of the economic model to be used is included as Appendix 3.

1. Current and projected construction and development costs
2. Physical configuration and inventory
3. Market factors
4. Operating factors
5. Financial factors
6. Infrastructure requirements
7. Subsidies
8. Net present value
9. Fiscal cost/benefit (preliminary)

1. Costs and Cost Projections

Current unit costs for various kinds of construction and other improvements are stored and updated in this section of the model.

2. Physical Configuration and Inventory

This section of the model contains the basic accounting inputs, such as the unit sizes, the number of housing and commercial units and the location of units by geographic subarea. All of the relevant descriptive inputs pertaining to the project are stored here.

Information on the configuration of the scheme is obtained from the planning team. Cost information is also obtained from the various members of the planning team, as well as other appropriate sources.

3.0 OPPORTUNITIES AND CONSTRAINTS

3. Market Factors

The timing of development and its scheduling are dependent on market absorption estimates. These estimates determine when development would occur and what particular units are built. In addition, information of prices and rents are needed as inputs.

Market information is obtained from the planning team, the land owner and the EIR consultant.

4. Operating Factors

Pro forma analyses of individual development entities are performed using the best estimates available for: rents, prices, operating and maintenance expenses, developer exactions, and tax factors. The results are estimates of the cash flows associated with a development entity.

The pro formas are based on our best knowledge of real estate investment practices, or what a prudent investor would expect and undertake.

5. Financial Factors

Since project feasibility is affected by financing, this section would contain the information on terms and interest rates and sources.

6. Infrastructure

Infrastructure refers to the investment in the land required to make the project physically feasible. Investments are required in sewers, roads, streets, freeway ramps, landscaping, and perhaps other areas. Infrastructure relates to the investment not associated with a particular building or group of buildings.

3.0 OPPORTUNITIES AND CONSTRAINTS

There are two sources of financing the infrastructure, the private development and the public sector. The allocation of costs for infrastructure and amenities is often the result of bargaining during the development process. In this section of the model, the infrastructure will be accounted for and allocated to either the private side of development or the public side. As private expense, it affects the profitability, and as public expense, it affects the fiscal cost/benefit ratio.

7. Subsidies

Since the MOU stipulates some below market housing, subsidies are necessary, so they might as well be made explicit. There are three sources of subsidies:
(1) private contributions, exactions or writedowns,
(2) public direct support such as rent payments, and
(3) public indirect support such as tax breaks or infrastructure contributions.

This section will account for and keep track of subsidy items.

8. Net Present Value

The development scheme has a "bottom lime" which is the net present value of the project. It is the sum of the private investments, and the streams of revenues and costs over the project life, discounted to the present at an appropriate rate which reflects what the opportunity is worth to a private investor, given the money to be expended and the anticipated return.

To be feasible, the project should have a positive net present value. However, determing NPV is not as easy as it sounds, since it is built on a pyramid of estimates, any one of which will influence the final values.

3.0 OPPORTUNITIES AND CONSTRAINTS

9. Preliminary Fiscal Cost/Benefit

The project will provide a variety of revenues to the city, and also entail some costs for services. This section of the model calculates some of the revenues from taxes, services and fees, and some of the estimates of costs for additional services such as public safety, education, and normal maintenance. Special exactions or contributions are also accounted for here.

This section is only preliminary at this time since a full and detailed fiscal analysis will not be available until later in the study process. The numbers produced in this section would be indicative but not definitive. The numbers could change substantially in a more detailed analysis.

3.7.2 Employment

The Mission Bay site represents significant employment opportunities in terms of accommodating the growth of jobs in San Francisco. There is a constraint, however, in the types of jobs that can reasonably be attracted to the site. Trends in San Francisco suggest that any appreciable increase in the number of blue collar jobs is unlikely, as industrial employers cannot afford either relatively expensive urban land costs or large work forces.

3.0 OPPORTUNITIES AND CONSTRAINTS

Summary of San Francisco Projected Employment Growth, as per Association of Bay Area Governments

According to the most recent forecast of the Association of Bay Area Governments (ABAG), San Francisco's employment will increase from 566,300 jobs in 1985 to 665,800 jobs in the year 2005.¹ During this period the average number of new jobs created in San Francisco will be about 5,000 jobs per year.

The largest increases will occur in the white collar/gray collar areas of Finance-Insurance-Real Estate and the Service sector. Manufacturing and wholesaling will continue to decline, as will communications, utilities and transportation. Government employment will be virtually unchanged. The retail sector will expand to accommodate the increased employment base and population. In the retail sector the fastest growing sector will be in the eating and drinking categories.

Population¹

San Francisco's population will decrease from an estimated 718,500 in 1985 to 714,200. In spite of this absolute decline, the number of households will increase from 308,020 to 325,560 during the same period. This will be accommodated by the continuing decline in average household size, from 2.25 persons per household to 2.12.

The number of employed residents will increase from 369,600 in 1985 to 410,200 in 2005. In 1985 residents accounted for approximately 55 percent of San Francisco employment. By 2005 San Francisco residents will account for 52 percent of all the City's jobs.

¹ Association of Bay Area Governments, Projections - 85: Forecasts for the San Francisco Bay Area to the Year 2005, July 1985.

3.0 OPPORTUNITIES AND CONSTRAINTS

San Francisco and the Region¹

In 1985 San Francisco accounted for 22 percent of the Region's jobs (including San Jose). Although jobs will expand significantly in the City, San Francisco's share of the region's job market will decline to 17 percent.

San Francisco's share of the region's population will also decline from a current 13 percent to 11 percent in 2005.

Manufacturing in the Region

Manufacturing in San Francisco has been, and will continue to decline. However, manufacturing will increase substantially in the region. According to ABAG manufacturing employment should increase from 551,000 in 1985 to 833,400 in the year 2005, representing an increase of 282,400 jobs. But more significantly 193,000 of those jobs, or two-thirds of the increase, will be in "high-tech" employment. The "high-tech" sectors are aerospace, computers, electronics, scientific instruments, communications, office equipment and the emerging bio-technology areas.

Economic Development at Mission Bay

The Mayor's Letter of October 16, 1984, which provides a benchmark for this analysis, contains up to the following amounts of commercial space:

Office	4,124,800 Sq. ft.
R&D	2,600,955 Sq. ft.
Retail	201,000 Sq. ft.

¹ Ibid.

3.0 OPPORTUNITIES AND CONSTRAINTS

Translating Space into Employment

Office Employment

A standard rule of thumb of office space is to allocate 250 square feet of space per employee. Using this standard and the Mayor's Letter benchmark, the 4.1 million square feet of office space would accommodate 16,400 office workers.

Research and Development Employment

The ratio of employment to floor space is lower in the R&D area than for offices, due to the larger amount of machinery and equipment involved. R&D space would provide approximately three employees per 1,000 square feet. Using this measure, the 2.6 million square feet of R&D space would accommodate 7,800 workers.

Retail/Commercial

The Mayor's Letter (October 1984) mentions 201,000 square feet of retail and commercial space, oriented primarily to the Mission Bay residential population and workforce. Retail enterprises, such as stores and restaurants, typically employ three employees per 1,000 square feet of space. Using this ratio the 201,000 square feet of retail space would provide approximately 600 jobs.

Construction Jobs

Building Mission Bay will produce temporary construction jobs. The 7,500 housing units and 6.7 million square feet of office and light industrial space of the Mayor's Letter, would require on the order of 1,500 to 2,000 person years of construction trade employment.

3.0 OPPORTUNITIES AND CONSTRAINTS

Absorption of the Proposed Space

The Office Space contemplated for Mission Bay is so called "back office" space, such as order processing, data processing, and other activities usually performed away from the company headquarters. Over the past decade many San Francisco companies have decentralized some of their back office activities out to the suburbs, where the rent is lower and a potential labor force is available.

Downtown San Francisco rents are higher than can be justified for extensive back office activities. According to some estimates the five to seven dollars per square foot advantage the suburban location confers is sufficient to warrant decentralization of non-executive functions.

Mission Bay offers the potential advantages of lower than downtown rents, yet closer proximity than the suburbs. If Mission Bay can maintain the required rent differential, vis-a-vis downtown, it can present an opportunity for the city to bolster its position in regard to maintaining "back office" employment.

Research and Development

San Francisco is currently an insignificant factor in the region's high technology manufacturing. Although many firms in the high technology fields maintain San Francisco offices, they are primarily in sales and administration.

The R&D space at Mission Bay could potentially make San Francisco more of a factor in high technology production. To put Mission Bay in perspective, 2.6 million square feet at Mission Bay with approximately 7,800 employees would represent four percent of the region's anticipated growth in high tech employment. Four percent is a substantial but not overwhelming portion of the region's total demand for such space.

3.0 OPPORTUNITIES AND CONSTRAINTS

Business Opportunities

The contemplated 201,000 square feet of retail and commercial space represent opportunities for new businesses, primarily in the service and retail sectors. The development would require eating and drinking places, supermarkets and other food stores, personal services such as cleaning, barber and hair preparation, and repair services, and an assortment of business-serving activities. Adding additional retail space, if viable, would add additional diverse employment opportunities and increase activity levels within the development. Such use of land could constrain other development, however, by reducing the land available for other uses.

At an average size of 2,000 square feet per enterprise, Mission Bay could sustain on the order of 100 businesses. These small businesses would create employment in addition to entrepreneurial opportunities.

3.7.3 Affirmative Action

Affirmative action refers to the active extension of equal opportunities to sectors of the population who have traditionally been outside the social mainstream. In this context, San Francisco has historically had an ethnically diverse population, though all sectors have not shared equally in housing quality or employment and business opportunities.

Affirmative action does not automatically happen. It only happens when there is a strong commitment from the top, and a delivery system to make it happen. The commitment is essential, but somebody has to see it through and monitor the results. In the case of Mission Bay, any commitment must be shared by the developer and the city, and the follow through depends on the city and the community as a whole. That is, the community must care about affirmative action and contribute to its ongoing support and monitoring.

3.0 OPPORTUNITIES AND CONSTRAINTS

The affirmative action opportunities at Mission Bay encompasses (1) housing opportunities, (2) employment opportunities, and (3) business opportunities.

From a socio-economic point of view, the Mission Bay Project represents the opportunity for the City to meet many of its and the community's housing goals—the opportunity to increase the housing stock, to provide housing in a well-balanced community with attendant services and amenities, to develop housing of an appropriate density for the site and of excellent design, to provide a wide choice of housing in terms of rental as well as sales, units for large families as well as units for single individuals, housing designed for the needs of special groups such as the elderly, handicapped and those needing live/work situations, and housing which is affordable for a wide range of economic groups. The project represents a rare opportunity in which the site is big enough to address a broad spectrum of needs and big enough to allow a mixed-use development in which higher income-producing uses can help subsidize the housing use.

The major constraint is an economic one. It is very difficult to make even market-rate housing "pencil out" in San Francisco. Several non-subsidized market-rate housing developments have failed during the last few years. The more restrictions which represent cost which are put on the developer without providing additional subsidies, the less likely the developer will be to make the housing economically viable. There are virtually no federal or state programs currently in existence to help subsidize housing.

3.7.4 Housing

The Mayor's Letter (October 1984) establishes the benchmark of 30 percent affordable housing (15 percent by the developer and 15 percent by the City). The program should allow for a mix of housing tenants, including elderly, and some low and moderate income households of various ethnic and racial backgrounds.

3.0 OPPORTUNITIES AND CONSTRAINTS

The great opportunity at Mission Bay is the potential of producing quality housing on a non-segregated and non-stigmatized basis. If the affordable housing is mixed at random with the market rate units, the assisted households would not stand out or be stigmatized. This would enhance the development itself, and produce a better living environment for both the assisted and unassisted households.

The City's Residence Element of its Comprehensive Plan states the following:

"The lack of Federal and State subsidies makes it particularly difficult to set targets for below market-rate housing. The City will work with the variety of resources described in Part III of the element to attempt to provide new housing at all income ranges. However, the amount of subsidy required is substantial. It is estimated that reducing the cost of a one-bedroom unit so that it is affordable by a very low-income household would require a lump sum subsidy of \$59,000; making the unit affordable to a low-income household would require a subsidy of \$43,000 and to a moderate-income household, a subsidy of \$22,000. The availability of local public resources to provide that amount of subsidy for a large number of units is highly questionable. The extent to which the private housing developer can be expected to absorb this amount of subsidy is also very limited. Asking too much may destroy the incentive to develop any housing at all. Despite these caveats, the City is committed to do as much as it reasonably can with available public and private resources."

Employment

There are two sources of jobs at Mission Bay, the construction jobs and the permanent jobs after construction.

3.0 OPPORTUNITIES AND CONSTRAINTS

Construction Jobs

Tremendous opportunities exist in the construction sector for a variety of jobs in the crafts and as apprentices. Where there are federal funds involved the development must comply with the Office of Federal Contract Compliance and hire minorities and women according to agreed upon timetables and goals. Although Mission Bay is not a government development project, there is an opportunity to consider affirmative action concepts. This could include consideration of job training programs for apprentices and affirmative action outreach in securing jobs for minority and women journey workers.

Because of the scale and length of time involved in building the Mission Bay project, an apprentice might start a career at Mission Bay and be at journeyman level in middle age by the time the project is complete.

Business Opportunities

Affirmative action could extend to the business opportunities from the 200,000 square feet of retail commercial space, and perhaps to other portions of the project. The developer's reach does not usually extend to tenants, however. This would require employing some creative and innovative measures to assure that a portion of the entrepreneurial opportunities become available to minorities.

3.7.5 Housing Production Rate

Over the past 15 years San Francisco has had an average of 1,411 new housing units completed each year¹. During this period an average of 413 housing units per year have been demolished. Thus, on average the net additions to the housing inventory have been 998 units per year.

¹ Residence: Housing Information Series, Changes in the San Francisco Housing Inventory 1983-84. Department of City Planning.

3.0 OPPORTUNITIES AND CONSTRAINTS

Between 1985 and 2005 the number of households in San Francisco will increase by 17,540 according to the projections made by ABAG. Of course these projections are based on historical trends and are subject to some degree of error. Nevertheless, using this as a base, the ABAG projections imply a net increase of an average of 877 new households per year. This figure is somewhat lower than the rate of housing construction over the past 15 years.

The Mayor's Letter calls for at least 7,500 new housing units at Mission Bay. Assuming a 20 year build-out period, this would necessitate an average absorption of 375 housing units per year. This number would be approximately 27 percent of the average absorption over the past 15 years. Using the ABAG projections (and adding a factor for demolitions) 375 units per year would represent 29 percent of the expected market.

Capturing 25 to 30 percent of the San Francisco housing market in a single project is an ambitious undertaking. However, on the positive side is the fact that there are not many alternative sites available for substantial projects in the city, and there is little likelihood of increasing densities in other parts of the city. By the time Mission Bay would be underway the current inventory of buildable housing sites in the city would be further depleted.

Mission Bay represents an opportunity to realize a portion of the projected increase in housing within a newly planned community without disrupting existing neighborhoods. The constraint, however, is that this housing would be in a new area not known for its housing desirability. There are greater infrastructure costs involved, albeit lower land costs. There are more risks involved in absorption of the housing, particularly if it is relatively homogeneous and does not appeal to a wide range of interested residents.

SAN FRANCISCO HOUSING CONSTRUCTION AND DEMOLITIONS

SAN FRANCISCO HOUSING UNIT TRENDS				
YEARS	UNITS CERTIFIED COMPLETE	ANNUAL NET CHANGE	HOUSING UNITS DEMOLISHED	AUTHORIZED FOR CONSTRUCTION
1984	709	711	79	1,313
1983	1,400	1,167	233	1,167
1982	589	547	42	1,215
1981	780	492	288	1,242
1980	980	852	128	1,202
1979	1,516	1,402	114	1,833
1978	1,375	1,201	174	2,045
1977	1,616	1,480	136	1,536
1976	1,480	773	707	1,622
1975	2,495	2,056	439	1,142
1974	2,454	1,680	774	1,386
1973	1,578	653	925	4,150
1972	1,713	850	869	3,439
1971	1,497	940	557	3,614
1970	990	260	730	1,671
TOTAL	21,172	15,064	6,195	28,577
AVERAGE	1,411	1,004	413	1,905
SOURCE: SAN FRANCISCO DEPARTMENT OF CITY PLANNING				
RESIDENCE HOUSING INFORMATION SERIES 1983-1984				

Appendices



General

Central Waterfront Plan--The plan document which is an "industrial district improvement plan" adopted by resolution of the Planning Commission in 1980 in order to implement the Commerce and Industry Element of the Comprehensive Plan as it pertains to the Central Waterfront. This plan is the controlling planning document for the Mission Bay Project and was adopted as part of the Comprehensive Plan.

Central Basin Area--The area of the Central Waterfront Plan which includes the easterly portion of the Mission Bay Project.

China Basin Subarea--The subarea of the Central Waterfront Plan which includes most of the Mission Bay Project.

City Planning Code--The Code contains regulations governing the type and intensity of land use and related matters. The Code includes zoning and other types of regulations.

Comprehensive Plan--It is the responsibility of the City Planning Commission acting under its charter authority "to adopt and maintain . . . a comprehensive, long-term, general plan for the improvement and future development of the city and county" The term Master Plan may also be used for its identification. It is comprised of many "Elements".

Development Agreement--An agreement authorized by Government Code Section 65864 *et seq.* between a local government and any person having a legal or equitable interest in real property for the development of same.

Development Proposal--The proposal for the development of the Mission Bay Project which is being prepared by the Santa Fe Pacific Realty Corporation.

Initial Concept Proposal—A preliminary exploration of a proposed development pattern for the Mission Bay Project.

Mission Bay Project--The development proposal of the Santa Fe Pacific Realty Corporation, or property owned by its affiliate corporation, for a portion of the area within the area encompassed by the Central Waterfront Plan.

Program EIR—An environmental impact report prepared in accordance with Section 15069.8 of the State EIR Guidelines to identify potential significant impacts of a general development plan or program.

OHPP--Office Housing Production Program.

Transportation

Right-of-Way—The location and physical characteristics of the route of the transit service.

Type of Right-of-Way:

Mixed Traffic/Surface—The transit service shares space on the street with other forms of transportation (autos, trucks, pedestrians).

Partially Controlled--The transit system is given some separation from other transportation systems but must compete for space at major intersections.

Separate--The transit system is completely separated from all other competing transport modes.

Type of Transit Service:

<u>Right-of-Way Type</u>	<u>Station Spacing</u>	<u>Average Speed</u>	<u>Examples</u>
Commuter Railroad Separate	1 mile or greater	Greater than 25 mph	Caltrain
Rapid Transit Separate	1 mile (average)	25 mph	BART
Light Rail Transit Separate	less than 1 mile	16 mph	Muni Metro in Market Street
Light Rail Transit Partially Controlled	less than 1 mile	9 mph	Muni Metro on Judah--9th to 19th
Surface Transit (Street Car, Trolley Car, Diesel Coach) Mixed Traffic	500 to 800 feet	6 to 8 mph	30-Stockton, 15-Third, Proposed E Line streetcar

Trip Generation--The application of typical rates of trip-making to basic socioeconomic or land-use factors (e.g., population, employment, or acres or square feet of building area) to determine the number of trips which will be generated by a particular development.

Trip Distribution--The determination of the destinations of trips from a development expressed in terms of the percentage of total trips generated in "Trip Generation" above.

Trip Assignment--The selection of a particular route for the trips expected to occur between the development under study and each destination identified in "Trip Distribution" above.

Modal Split--The share of total trips which is accommodated by the transit mode as compared to the trips on all transportation services.

Housing

Below-Market Rate Housing--Refers to housing which by use of public or private subsidy is offered for rent or for sale below the price which the market could bear.

Publicly-Assisted Housing--A comprehensive term for all housing programs which serve low and moderate income households and which are financed and/or subsidized, wholly or in part, from local, state, and/or federal funding sources.

Typology--A recurrent pattern of building organization; the invariant characteristics of a particular classification of buildings. The type of buildings found in a specific area.

Housing Density--The number of dwellings on an acre of land.

Density Index--For purposes of the Mission Bay Plan--the number of 900-square-foot dwellings on an acre of land including alleys but excluding street.

Cost Index--The construction cost of a typical 900-square-foot dwelling and its required parking expressed as a percentage of the cost of producing the same unit in a high rise building with expensive foundation and parking cost. The cost index does not include land cost, financing or marketing costs, architectural or engineering fees.

DU.--Dwelling unit.

Affordable Unit--A dwelling for which the rent or carrying costs do not exceed 30 percent of the income of a household making 120 percent of the median income in San Francisco.

Tandem Dwellings--A pattern of San Francisco housing that emerged in the 1850s and 60s: a building usually with one, two or three units facing a garden, behind another building usually with one, two or three facing a street.

Vara Grid--The basis of the original San Francisco plan and house type. A vara is 2'-9". San Francisco blocks north of Market are 100 x 150 varas. Typical residential parcels are 10 x 50 varas, changed in English measure to 25' or 27'-6" x 137'-0". The creation of alleys or tandems in typical blocks frequently shorten the 137' dimension.

Hydrology

Ebb Current--The movement of a tidal current away from shore or down a tidal river or estuary.

Flood Current--The movement of a tidal current toward the shore or up a tidal river or estuary.

Great Diurnal Range (Gt)--The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, diurnal range.

High Water (HW)--The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, high tide, is discouraged.

Higher High Water (HHW)--The higher of the two high waters of any tidal day.

Higher Low Water (HLW)--The higher of the two low waters of any tidal day.

Low Water (LW)--The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of meteorological conditions. Use of the synonymous term, low tide, is discouraged.

Lower High Water (LHW)--The lower of the two high waters of any tidal day.

Lower Low Water (LLW)--The lower of the two low waters of any tidal day.

Lunar Day--The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.

Mean Lower Low Water (MLLW)--A tidal datum. The arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the lower low water of each pair of low waters, or the only low water of a tidal day is included in the mean.

Mean High Water (MHW)--A tidal datum. The arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

Mean Higher High Water (MHHW)—A tidal datum. The arithmetic mean of the higher high water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the higher high water of each pair of high waters, or the only high water of a tidal day is included in the mean.

Mean Higher High Water Line (MHHWL)—The intersection of the land with the water surface at the elevation of mean higher high water.

Mean Low Water (MLW)—A tidal datum. The arithmetic mean of the low water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

Mean Range of Tide (Mn)—The difference in height between mean high water and mean low water.

Mean Tide Level (MTL)—Also called half-tide level. A tidal datum midway between mean high water and mean low water.

Mean Sea Level (MSL)—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Shorter series are specified in the same name; e.g., monthly mean sea level and yearly mean sea level.

Semidiurnal—Having a period or cycle of approximately one-half of a tidal day. the predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

Slack Water--The state of a tidal current when its speed is near zero, especially the moment when a reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progressive tidal waves, slack water occurs midway between high and low water.

Tide--The periodic rise and fall of the water resulting from gravitational interactions between the Sun, Moon and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

Land Use/Urban Design

Infrastructure--The series of systems that make up the physical structure of a neighborhood, community or city. Utilities, roads, streets and alleys, parks and community facilities are part of the infrastructure of the Mission Bay and Potrero Hill areas.

F.A.R.--Floor Area Ratio--Total square feet of building in relation to site area. Example: 3-story building, with 40,000 square feet each floor, has a total of 120,000 square feet. If the total site area is 120,000 square feet, the F.A.R. is 1. If the site area is 240,000 square feet, the F.A.R. is 0.5.

R&D--Research and Development. Mixed use-projects where different types of uses (typically desk or laboratory research and development) are located within the same building or sample complex of buildings. Can also be distribution, warehousing and some forms of light manufacturing.

View Corridor--Straight opening to distant view--not necessarily a street.

Axis--Straight line connecting two points with "things" arranged in a balanced way on each side of the line.

Axially Symmetrical--Objects, spaces arranged in mirror image on each side of a straight line.

Grid--Series of straight lines parallel to one another crossed at 90 degrees by another series of parallel straight lines making regular rectangular spaces between the lines.

Sight Line--Imaginary line from eye level to distant view--way of assessing whether or not an object cuts off the view from a certain point.

Cross Section--Drawing showing a cut through the earth and built structures perpendicular to the surface of the earth.

Open Space--Other than buildings and vehicular surfaces--includes Mission Creek as well as small parks, plazas, canals which have public access and separate bulidings.

Gateway--Not necessarily a gate structure--a significant entrance to an area marked by landscape, buildings, signs, structures, . . .

Maritime Activities--In addition to docks for passenger and freight. Includes dry docks, commercial activities, boat repair, fishing, shipping storage, waterways research, tugs, naval architects, marinas, swim clubs, rowing clubs.

Landscape--Anything of a permanent nature which can be seen outdoors. The physical image and character of all outdoor space (urban, rural, natural, man-made, hard, soft) including exterior configurations and sides of buildings, paving, plant materials, earth forms, and water. It is more than just plant materials.

Open Space--In general: all space not enclosed. More specifically, as in "open space" element of the plan: parks, plazas, pedestrian amenities, waterways, water features, areas generally associated with recreation, whether hard or soft surfaces.

Concept--A fundamental guiding idea or group of ideas, fairly general, which is proposed or selected as the theme and form-giver as well as the physical structuring device for a planning or design problem, i.e., Principles and Objectives of the Mission Bay Study. Subsequent planning/design is therefore a response to the concept; an expression of the concept. The concept must contain the strength for the plan/design. The design is the manifestation of the concept. Several designs may be possible for the same concept. The concept generally embodies decisions which must be adhered to, responded to, supported, or consciously changed.

Community Services and Facilities

Community Services--Service delivery systems including education, library, health care, police and fire protection and social services.

SFUSD--San Francisco Unified School District.

Neighborhood Arts Facility--Single purpose facilities accommodating various arts programs. Meeting rooms can be made available for other community services.

Major or Secondary Thoroughfare--Major arterial system providing for the through traffic movement between areas and across the city. Important for the locational siting of public facilities.

Sewage Outfalls--The location at which the sewage overflow enters the Bay.

Live/Work Space--Loft or studio spaces for individuals working and living in the same environment. Typically space for artists and craftspersons.

Multi-use facility--1) allowing the same spaces to be used for different purposes with obvious savings in construction costs. 2) civic centers which combine various functions in one building.

Community Safety Element of the Comprehensive Plan--Enacted in 1974. Element of the San Francisco Comprehensive Plan which provides the basis for inclusion of geologic and fire hazard concerns in the planning and development process. The fundamental goal of the element is to establish ways to reduce the risk to San Franciscans from geologic and fire hazards.

Cluster Development--Configuration of several community facilities on a single site sharing common functions.

Linear Development--Grouping of individual community facilities along a commercial strip.

Scattered Development--Dispersion of neighborhood facilities within minimum walking distance to residential areas.

Accessibility—Exterior and interior barrier free design in accordance with local, state and federal codes.

General Summary of Maritime Activity:

Before discussing the Port's operations and plans in detail, it is appropriate to provide a general glossary of maritime activities taking place at the Port.

Ocean going ships consist of Freighters, Bulk Carriers, Container Ships, and LASH (Lighter Aboard Ship) Ships. There are also Ocean going barges towed by tugboats.

Freighters generally have smaller cargo capacities than the other ocean going ships. They specialize in "break bulk" cargoes. These are cargoes that are shipped in their own non-standardized containers. Often these cargoes must be consolidated and palletized for shipment.

Bulk carriers specialize in carrying bulk commodities (oil, grain, woodchips, etc.) and are generally designed to carry only one or two types of bulk commodities.

Container ships specialize in carrying cargo that is shipped in standardized metal containers that can be stacked in the ship. Each container can be shipped directly by truck or rail to the port and loaded directly on the ship thus minimizing handling costs.

Roll on--roll off ships are a variation of the container concept. Cars or truck trailers are driven directly onto and off of the ship.

LASH ships specialize in hauling small standardized barges called lighters. The lighter is a shallow draft barge that can be loaded at an inland port (or undeveloped coastal port) and then transported to deeper water where the mother ship is anchored. The lighter is lifted out of the water and stacked on the LASH ship. LASH ships can carry both containerized cargo and lighters.

 Hydrology—Definitions

Datum	Abbreviation	Definition
Mean higher high water	MHHW	Average height of the higher of the daily high tides
Mean high water	MHW	Average height of all high tides
Mean tide level	MTL	Plane halfway between mean high water and mean low water, also called half-tide level
Mean low water	MLW	Average height of all low tides
Mean lower low water	MLLW	Average height of the lower of the daily low tides. Adopted as plane of reference for hydrographic surveys and nautical charts of the west coast of the United States
Mean sea level	MSL	Average height of the water surface for all stages of the tide, determined from hourly readings
National Geodetic Vertical Datum of 1929	NGVD	The standard datum for heights across the nation. Formerly called the "U.S. Coast and Geodetic Survey sea-level datum of 1929," and originally determined from mean sea levels at 25 tide stations in the United States and Canada. Generally differs from local sea level so it is best regarded as an arbitrary datum that happens to be close to mean sea level

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APPENDIX 3 ECONOMIC MODEL

the first of these is the fact that the system is not yet fully operational.

The second is the fact that the system is not yet fully operational.

The third is the fact that the system is not yet fully operational.

The fourth is the fact that the system is not yet fully operational.

The fifth is the fact that the system is not yet fully operational.

The sixth is the fact that the system is not yet fully operational.

The seventh is the fact that the system is not yet fully operational.

The eighth is the fact that the system is not yet fully operational.

The ninth is the fact that the system is not yet fully operational.

The tenth is the fact that the system is not yet fully operational.

	A	B	C	D	E
1	MISSION BAY ECONOMIC FEASIBILITY MODEL				
2	SCHEDULE OF INPUTS AND RELATIONSHIPS				
3		INPUT OR	SOURCE OR		
4	COST INPUTS FOR PRIVATE DEVELOP	OPERATION	COMMENT		
5	HARD COSTS				
6	SITE PREPARATION COSTS				
7	GRADING	INPUT	<i>HARD COSTS ARE FROM ENGINEERS, ARCHITECTS, ETC.</i>		
8	FILL	INPUT			
9	OTHER SITE COSTS #1	INPUT			
10	OTHER SITE COSTS #2	INPUT			
11	LANDSCAPING COSTS				
12	OPEN SPACE LANDSCAPING	INPUT			
13	HARDSCAPE	INPUT			
14	SIDEWALKS	INPUT			
15	OTHER	INPUT			
16	RESIDENTIAL COSTS PER SQFT				
17	RES-BLDG TYPE #1	INPUT			
18	RES-BLDG TYPE #2	INPUT			
19	RES-BLDG TYPE #3	INPUT			
20	PARKING COSTS PER SQFT				
21	SURFACE PARKING	INPUT			
22	PARKING STRUCTURE TYPE #1	INPUT			
23	PARKING STRUCTURE TYPE #2	INPUT			
24	PARKING STRUCTURE TYPE #3	INPUT			
25	OFFICE BUILDING COSTS				
26	OFFICE BLDG TYPE #1	INPUT			
27	OFFICE BLDG TYPE #2	INPUT			
28	OFFICE BLDG TYPE #3	INPUT			
29	OFFICE BLDG TYPE #4	INPUT			
30	R & D BUILDING COSTS				
31	R & D BLDG TYPE #1	INPUT			
32	R & D BLDG TYPE #2	INPUT			
33	R & D BLDG TYPE #3	INPUT			
34	COMMERCIAL BUILDING COSTS				
35	COMMERCIAL TYPE #1	INPUT			
36	COMMERCIAL TYPE #2	INPUT			
37	COMMERCIAL TYPE #3	INPUT			
38					
39	HARD COST SPECIAL FACTOR	INPUT	<i>SPECIAL SITE CONDITIONS MAY REQUIRE A SCALE FACTOR</i>		
40					
41	SOFT COSTS OF CONSTRUCTION				
42	FEES	INPUT			
43	INTEREST DURING CONSTRUCTION	INPUT			
44	LEGAL, TITLE, ETC	INPUT			
45	OTHER FEES	INPUT			
46	SOFT COST FACTOR	FORMULA			
47					

MISSION BAY MODEL - 1

	A	B	C	D	E
48	PHYSICAL INVENTORY				
49	SUBAREA # 1		<i>THERE IS AN ACCOUNTING IN EACH MAJOR SUBAREA AND FOR EACH TYPE OF USE</i>		
50	ACRES	INPUT			
51	% ACRES LANDSCAPED	INPUT			
52	RESIDENTIAL UNITS TYPE # 1	INPUT			
53	RESIDENTIAL UNITS TYPE # 2	INPUT			
54	OFFICE SPACE TYPE # 1	INPUT			
55	OFFICE SPACE TYPE # 2	INPUT			
56	R & D SPACE TYPE # 1	INPUT			
57	R & D SPACE TYPE # 2	INPUT			
58	COMMERCIAL SPACE TYPE # 1	INPUT			
59	COMMERCIAL SPACE TYPE # 2	INPUT			
60	SURFACE PARKING	INPUT			
61	PARKING STRUCTURES # 1	INPUT			
62	PARKING STRUCTURES # 2	INPUT			
63					
64	SUBAREA # 2				
65	ACRES	INPUT			
66	% ACRES LANDSCAPED	INPUT			
67	RESIDENTIAL UNITS TYPE # 1	INPUT			
68	RESIDENTIAL UNITS TYPE # 2	INPUT			
69	OFFICE SPACE TYPE # 1	INPUT			
70	OFFICE SPACE TYPE # 2	INPUT			
71	R & D SPACE TYPE # 1	INPUT			
72	R & D SPACE TYPE # 2	INPUT			
73	COMMERCIAL SPACE TYPE # 1	INPUT			
74	COMMERCIAL SPACE TYPE # 2	INPUT			
75	SURFACE PARKING	INPUT			
76	PARKING STRUCTURES # 1	INPUT			
77	PARKING STRUCTURES # 2	INPUT			
78					
79	SUBAREA # N				
80	ACRES	INPUT			
81	% ACRES LANDSCAPED	INPUT			
82	RESIDENTIAL UNITS TYPE # 1	INPUT			
83	RESIDENTIAL UNITS TYPE # 2	INPUT			
84	OFFICE SPACE TYPE # 1	INPUT			
85	OFFICE SPACE TYPE # 2	INPUT			
86	R & D SPACE TYPE # 1	INPUT			
87	R & D SPACE TYPE # 2	INPUT			
88	COMMERCIAL SPACE TYPE # 1	INPUT			
89	COMMERCIAL SPACE TYPE # 2	INPUT			
90	SURFACE PARKING	INPUT			
91	PARKING STRUCTURES # 1	INPUT			
92	PARKING STRUCTURES # 2	INPUT			
93					

MISSION BAY MODEL - 1

	A	B	C	D	E
94	PRIVATE INVESTMENT		<i>THIS SECTION IS FOR THE</i>		
95	SUBAREA #1		<i>DEVELOPER'S EXPENSES ONLY</i>		
96	LANDSCAPING	FORMULA	<i>AND IS THE AMOUNT OF</i>		
97	SITE IMPROVEMENTS	FORMULA	<i>CONSTRUCTION TIMES THE COST</i>		
98	RESIDENTIAL UNITS TYPE #1	FORMULA	<i>FACTORS</i>		
99	RESIDENTIAL UNITS TYPE #2	FORMULA			
100	OFFICE SPACE TYPE #1	FORMULA			
101	OFFICE SPACE TYPE #2	FORMULA			
102	R & D SPACE TYPE #1	FORMULA			
103	R & D SPACE TYPE #2	FORMULA			
104	COMMERCIAL SPACE TYPE #1	FORMULA			
105	COMMERCIAL SPACE TYPE #2	FORMULA			
106	SURFACE PARKING	FORMULA			
107	PARKING STRUCTURES #1	FORMULA			
108	PARKING STRUCTURES #2	FORMULA			
109	TOTAL INVESTMENT IN SUBAREA	SUM			
110					
111	SUBAREA #2				
112	LANDSCAPING	FORMULA			
113	SITE IMPROVEMENTS	FORMULA			
114	RESIDENTIAL UNITS TYPE #1	FORMULA			
115	RESIDENTIAL UNITS TYPE #2	FORMULA			
116	OFFICE SPACE TYPE #1	FORMULA			
117	OFFICE SPACE TYPE #2	FORMULA			
118	R & D SPACE TYPE #1	FORMULA			
119	R & D SPACE TYPE #2	FORMULA			
120	COMMERCIAL SPACE TYPE #1	FORMULA			
121	COMMERCIAL SPACE TYPE #2	FORMULA			
122	SURFACE PARKING	FORMULA			
123	PARKING STRUCTURES #1	FORMULA			
124	PARKING STRUCTURES #2	FORMULA			
125	TOTAL INVESTMENT IN SUBAREA	SUM			
126					
127	SUBAREA #3				
128	LANDSCAPING	FORMULA			
129	SITE IMPROVEMENTS	FORMULA			
130	RESIDENTIAL UNITS TYPE #1	FORMULA			
131	RESIDENTIAL UNITS TYPE #2	FORMULA			
132	OFFICE SPACE TYPE #1	FORMULA			
133	OFFICE SPACE TYPE #2	FORMULA			
134	R & D SPACE TYPE #1	FORMULA			
135	R & D SPACE TYPE #2	FORMULA			
136	COMMERCIAL SPACE TYPE #1	FORMULA			
137	COMMERCIAL SPACE TYPE #2	FORMULA			
138	SURFACE PARKING	FORMULA			
139	PARKING STRUCTURES #1	FORMULA			
140	PARKING STRUCTURES #2	FORMULA			
141	TOTAL INVESTMENT IN SUBAREA	SUM			

MISSION BAY MODEL - 1

	A	B	C	D	E
142				
143	SUBAREA #N				
144	LANDSCAPING	FORMULA			
145	SITE IMPROVEMENTS	FORMULA			
146	RESIDENTIAL UNITS TYPE #1	FORMULA			
147	RESIDENTIAL UNITS TYPE #2	FORMULA			
148	OFFICE SPACE TYPE #1	FORMULA			
149	OFFICE SPACE TYPE #2	FORMULA			
150	R & D SPACE TYPE #1	FORMULA			
151	R & D SPACE TYPE #2	FORMULA			
152	COMMERCIAL SPACE TYPE #1	FORMULA			
153	COMMERCIAL SPACE TYPE #2	FORMULA			
154	SURFACE PARKING	FORMULA			
155	PARKING STRUCTURES #1	FORMULA			
156	PARKING STRUCTURES #2	FORMULA			
157	TOTAL INVESTMENT IN SUBAREA	SUM			
158					

MISSION BAY MODEL - 1

	A	B	C	D	E
159	INFRASTRUCTURE INVESTMENT		THIS SECTION ACCOUNTS FOR		
160	OPEN SPACE		THE DEVELOPER'S COSTS		
161	PARK IMPROVEMENTS #1	INPUT	WHICH ARE NOT ALLOCATED		
162	PARK IMPROVEMENTS #2	INPUT	TO SPECIFIC BUILDINGS		
163	ENVIRONMENTAL				
164	LAGOON AND WATERWAY	INPUT			
165	CANAL IMPROVEMENTS	INPUT			
166	LANDSCAPING (NCE)	INPUT			
167	OTHER	INPUT			
168	TRANSPORTATION				
169	280 STUB REMOVAL	INPUT			
170	TRAIN TRACK RELOCATION	INPUT			
171	TRAIN DEPOT RELOCATION	INPUT			
172	STREETS OFFSITE	INPUT			
173	STREETS ON SITE	INPUT			
174	UTILITIES				
175	ELECTRIC SERVICE	INPUT			
176	GAS SERVICE	INPUT			
177	COMMUNICATIONS	INPUT			
178	WATER	INPUT			
179	SANITATION AND SEWER	INPUT			
180	OFF SITE MITIGATIONS	INPUT			
181	SERVICES AND EXACTIONS				
182	SCHOOL FACILITIES	INPUT			
183	PUBLIC BUILDINGS	INPUT			
184	OTHER	INPUT			
185	TOTAL INFRASTRUCTURE	SUM			
186					

MISSION BAY MODEL - 1

	A	B	C	D	E
187	TOTAL INVESTMENT		<i>THIS IS THE SUMMARY FOR ALL</i>		
188	SITE PREPARATION	SUM	<i>THE INVESTMENT AT</i>		
189	RESIDENTIAL	SUM	<i>MISSION BAY</i>		
190	OFFICE BUILDINGS	SUM			
191	R & D BUILDINGS	SUM			
192	COMMERCIAL SPACE	SUM			
193	PARKING STRUCTURES	SUM			
194	LANDSCAPING	SUM			
195	INFRASTRUCTURE	SUM			
196	TOTAL	SUM			
197					
198					

MISSION BAY MODEL - 1

	A	B	C	D	E
199	OPERATIONS (PRO FORMAS)		THIS SECTION ASSUMES		
200	FINANCIAL FACTORS		"NORMAL" REAL ESTATE		
201	TAX RATE #1	INPUT	INVESTMENT SCENARIOS		
202	TAX RATE #2	INPUT			
203	ACRS DEPRECIATION SCHEDULE #1	INPUT SKED			
204	ACRS DEPRECIATION SCHEDULE #2	INPUT SKED			
205	INTEREST RATES				
206	PRIME RATE	INPUT			
207	BOND RATE	INPUT			
208	MUNICIPAL BOND RATE	INPUT			
209	INFLATION RATE	INPUT			
210	ESCALATION RATE	INPUT			
211	COST OF CAPITAL COMPOSITE RATE	INPUT			
212	PROPERTY APPRECIATION RATE	INPUT			
213	PROP 13 EFFECTIVE APR. RATE	INPUT			
214	SALES PRICES				
215	RESIDENTIAL UNIT #1	INPUT			
216	RESIDENTIAL UNIT #2	INPUT			
217	RESIDENTIAL UNIT #3	INPUT			
218	SALES EXPENSE	INPUT			
219	RENTS				
220	RESIDENTIAL UNIT #1	INPUT			
221	RESIDENTIAL UNIT #2	INPUT			
222	RESIDENTIAL UNIT #3	INPUT			
223	OFFICE SPACE TYPE #1	INPUT			
224	OFFICE SPACE TYPE #2	INPUT			
225	OFFICE SPACE TYPE #3	INPUT			
226	R & D SPACE #1	INPUT			
227	R & D SPACE #2	INPUT			
228	R & D SPACE #3	INPUT			
229	COMMERCIAL SPACE #1	INPUT			
230	COMMERCIAL SPACE #2	INPUT			
231	COMMERCIAL SPACE #3	INPUT			
232	OCCUPANCY RATES				
233	RESIDENTIAL	INPUT			
234	OFFICE SPACE	INPUT			
235	R & D SPACE	INPUT			
236	COMMERCIAL SPACE	INPUT			
237	MAINTENANCE COSTS				
238	RESIDENTIAL	INPUT			
239	OFFICE SPACE	INPUT			
240	R & D SPACE	INPUT			
241	COMMERCIAL SPACE	INPUT			
242	PARKING	INPUT			
243	OPEN SPACES	INPUT			
244					
245	OPERATIONS				
246	RESIDENTIAL				

MISSION BAY MODEL - 1

	A	B	C	D	E
247	RENTAL PROPERTIES - SUBAREA 1	FORMULA			
248	REVENUE	FORMULA			
249	O & M COSTS	FORMULA			
250	AMORTIZATION	FORMULA			
251	CASH FLOW BEFOR TAXES	FORMULA			
252	DEPRECIATION TAX SHELTER	FORMULA			
253	CASH FLOW AFTER TAXES	FORMULA			
254					
255	OFFICE SPACE				
256	RENTAL PROPERTIES - SUBAREA 1	FORMULA			
257	REVENUE	FORMULA			
258	O & M COSTS	FORMULA			
259	AMORTIZATION	FORMULA			
260	CASH FLOW BEFOR TAXES	FORMULA			
261	DEPRECIATION TAX SHELTER	FORMULA			
262	CASH FLOW AFTER TAXES	FORMULA			
263					
264	R & D SPACE				
265	RENTAL PROPERTIES - SUBAREA 1	FORMULA			
266	REVENUE	FORMULA			
267	O & M COSTS	FORMULA			
268	AMORTIZATION	FORMULA			
269	CASH FLOW BEFOR TAXES	FORMULA			
270	DEPRECIATION TAX SHELTER	FORMULA			
271	CASH FLOW AFTER TAXES	FORMULA			
272					
273	COMMERCIAL SPACE				
274	RENTAL PROPERTIES - SUBAREA 1	FORMULA			
275	REVENUE	FORMULA			
276	O & M COSTS	FORMULA			
277	AMORTIZATION	FORMULA			
278	CASH FLOW BEFORE TAXES	FORMULA			
279	DEPRECIATION TAX SHELTER	FORMULA			
280	CASH FLOW AFTER TAXES	FORMULA			
281					
282	PROPERTY SALES - SUBAREA 1				
283	SALES REVENUES	FORMULA			
284	SELLING COSTS	FORMULA			
285	GROSS PROFIT ON SALES	SUM			
286				
287	RESIDENTIAL				
288	RENTAL PROPERTIES - SUBAREA "N"	FORMULA			
289	REVENUE	FORMULA			
290	O & M COSTS	FORMULA			
291	AMORTIZATION	FORMULA			
292	CASH FLOW BEFOR TAXES	FORMULA			
293	DEPRECIATION TAX SHELTER	FORMULA			
294	CASH FLOW AFTER TAXES	FORMULA			

MISSION BAY MODEL - 1

	A	B	C	D	E
295					
296	OFFICE SPACE				
297	RENTAL PROPERTIES - SUBAREA "N"	FORMULA			
298	REVENUE	FORMULA			
299	O & M COSTS	FORMULA			
300	AMORTIZATION	FORMULA			
301	CASH FLOW BEFOR TAXES	FORMULA			
302	DEPRECIATION TAX SHELTER	FORMULA			
303	CASH FLOW AFTER TAXES	FORMULA			
304					
305	R & D SPACE				
306	RENTAL PROPERTIES - SUBAREA "N"	FORMULA			
307	REVENUE	FORMULA			
308	O & M COSTS	FORMULA			
309	AMORTIZATION	FORMULA			
310	CASH FLOW BEFOR TAXES	FORMULA			
311	DEPRECIATION TAX SHELTER	FORMULA			
312	CASH FLOW AFTER TAXES	FORMULA			
313					
314	COMMERCIAL SPACE				
315	RENTAL PROPERTIES - SUBAREA "N"	FORMULA			
316	REVENUE	FORMULA			
317	O & M COSTS	FORMULA			
318	AMORTIZATION	FORMULA			
319	CASH FLOW BEFORE TAXES	FORMULA			
320	DEPRECIATION TAX SHELTER	FORMULA			
321	CASH FLOW AFTER TAXES	FORMULA			
322					
323	PROPERTY SALES - SUBAREA "N"				
324	SALES REVENUES	FORMULA			
325	SELLING COSTS	FORMULA			
326	GROSS PROFIT ON SALES	SUM			
327					
328	SUMMARY FOR ALL SUBAREAS		SUMMARY FOR ALL THE		
329	REVENUE	SUM	USES IN THE VARIOUS		
330	O & M COSTS	SUM	SUBAREAS		
331	AMORTIZATION	SUM			
332	CASH FLOW BEFORE TAXES	SUM			
333	DEPRECIATION TAX SHELTER	SUM			
334	CASH FLOW AFTER TAXES	SUM			
335					

MISSION BAY MODEL - 1

	A	B	C	D	E
336	SUBSIDIES		THIS SECTION ACCOUNTS FOR		
337	DEVELOPER SUBSIDIES		ALL OF THE MEASURABLE		
338	SUBSIDY TYPE #1	INPUT	SUBSIDIES		
339	SUBSIDY TYPE #2	INPUT			
340	OTHER	INPUT			
341	CITY SUBSIDIES				
342	TYPE #1	INPUT			
343	TYPE #2	INPUT			
344					

MISSION BAY MODEL - 1

	A	B	C	D	E
345	RETURN ON INVESTMENT		<i>RETURN ON INVESTMENT</i>		
346	NET REVENUES		<i>IS MEASURED ALONG</i>		
347	FROM RENTS	SUM	<i>CONVENTIONAL LINES</i>		
348	FROM PROPERTY SALES	SUM			
349	TOTAL REVENUES	SUM			
350	LESS NET SUBSIDIES	SUM			
351	INVESTMENT				
352	REVENUE PRODUCING PROPERTIES	SUM			
353	INFRASTRUCTURE	SUM			
354	EXACTIONS	SUM			
355	TOTAL INVESTMENT	SUM			
356					
357	DISCOUNTED CASH FLOW	FORMULA			
358	NET PRESENT VALUE	FORMULA			
359					

MISSION BAY MODEL - 1

	A	B	C	D	E
360	PRELIMINARY FISCAL CONSEQUENCES		<i>THIS SECTION IS ONLY PRELIMINARY</i>		
361	PUBLIC INFRASTRUCTURE INVESTMENTS		<i>AT THIS TIME BECAUSE THE FISCAL</i>		
362	STREETS, ETC	INPUT	<i>DATA WILL BE COMING</i>		
363	SERVICES	INPUT	<i>AFTER A LATER ANALYSIS</i>		
364	OTHER	INPUT			
365	AMORTIZATION OF PUBLIC INFRASTRUCT	FORMULA			
366					
367	PROJECT REVENUES				
368	PROPERTY TAXES	FORMULA			
369	SALES TAXES	FORMULA			
370	OTHER REVENUES	FORMULA			
371	PROJECT DIRECT COSTS				
372	SERVICES	INPUT			
373					
374	PRELIMINARY NET COSTS/BENEFITS	SUM	<i>THIS FIGURE IS ONLY</i>		
375			<i>TENTATIVE UNTIL THE</i>		
376			<i>FISCAL STUDY IS DONE</i>		

APPENDIX 2 PARTIAL BIBLIOGRAPHY
